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TI 6490.20

INSTRUCTION BOOK

M200

MATRIX PRINTER

(LOGIC DIAGRAMS AND PARTS LIST)

PART OF

FLIGHT SERVICE AUTOMATION SYSTEM

VOLUME V

CONTRACT DTFA01-81-C-10039

CONTRACTOR

**CONTROLLED
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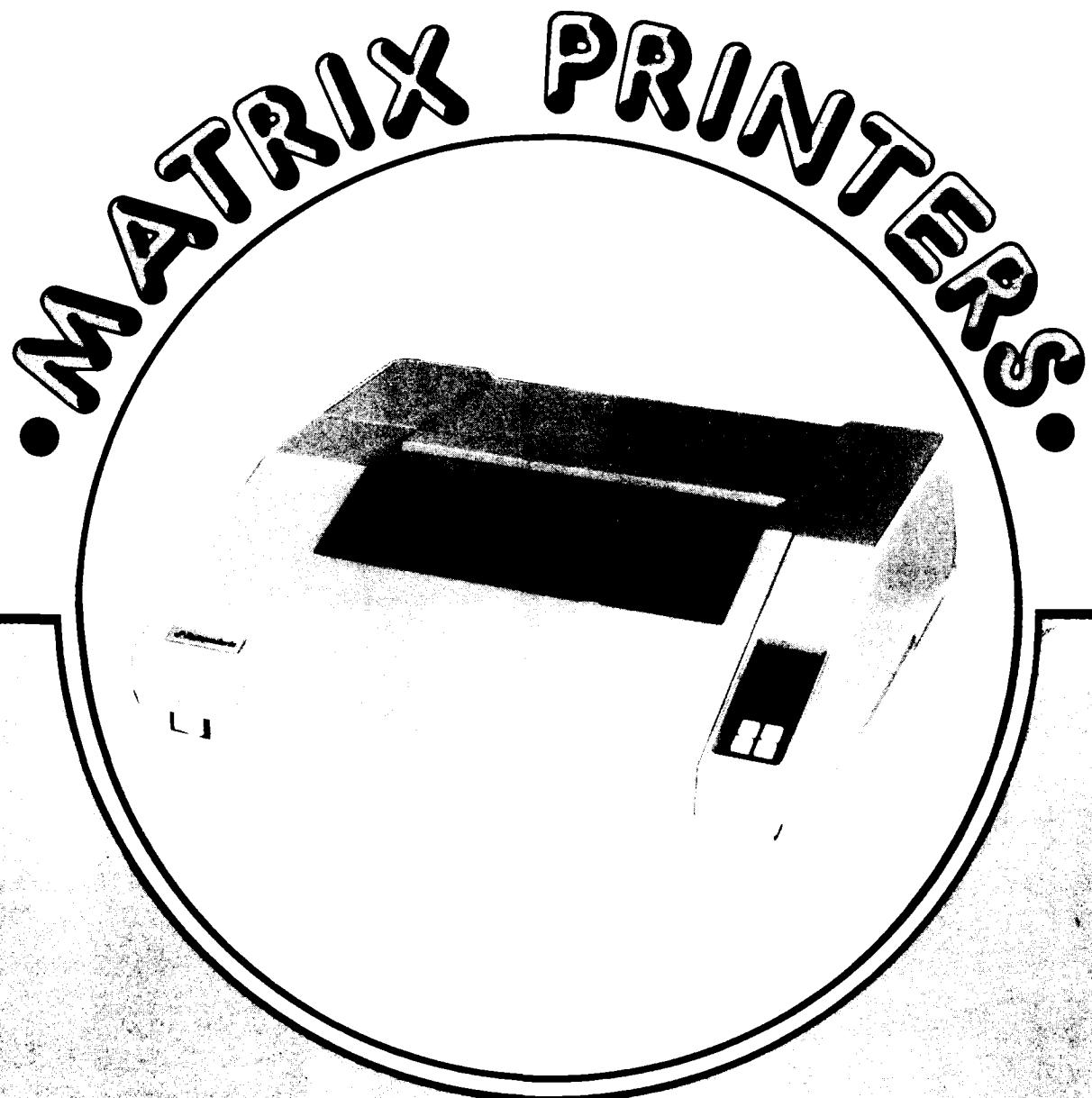
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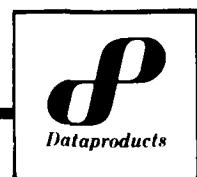
**U.S. DEPARTMENT OF TRANSPORTATION
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M-SERIES



VOLUME II OF II

MASTER SUPPORT AND LOGISTICS MANUAL



M-SERIES
MASTER SUPPORT
AND
LOGISTICS MANUAL

VOLUME II

MODELS
M120/M200

MATRIX PRINTERS

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6200 CANOGA AVENUE
WOODLAND HILLS, CALIFORNIA 91365

LOGIC DIAGRAMS

ILLUSTRATED PARTS LIST

FEBRUARY 1983

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SECTION IV

LOGIC DIAGRAMS

4.1 INTRODUCTION

This section is provided primarily as an aid to personnel engaged in maintaining or troubleshooting the printer, and in support of circuit descriptions given in the Theory of Operation section of volume I of this manual. It contains detailed information representing the functional logic used in the printer.

4.2 ORGANIZATION

This section is organized into the following parts:

- a. Logic Symbols
- b. Typical IC Devices
- c. Glossary of Mnemonic Terms
- d. List of Diagrams
- e. Signal Origin/Destination

4.3 LOGIC SYMBOLS

The logic symbols used in the logic diagrams conform to MIL-STD-806B. As such, active low signals are denoted by an overbar. Elsewhere in this manual, such as in text, tables, or in block and flow diagrams, the overbar is replaced by an asterisk (*).

A small circle at the input of a logic element indicates that a relatively low level (0V typical) activates that function. Conversely, the absence of a small circle indicates that a relatively high level (+5V typical) activates the function. Examples of some common functions of AND and OR symbols, and their equivalent truth tables, are shown in figure 4-1.

4.4 TYPICAL IC DEVICES

In addition to the common AND and OR circuits illustrated in figure 4-1, the printer uses a variety of IC devices for logic implementation. A selected number of the more common IC devices used in the printer is described in the following paragraphs. If more information is needed, consult the applicable data books.

4.4.1 Decoder/Demultiplexer (Figure 4-2)

The 74S138 chip decodes a 3-bit binary input into one of eight mutually exclusive outputs. As shown in figure 4-2, there are three enable inputs and three select inputs. Two of the enable inputs, G2A and G2B, are active low, and G1 is active high. All three select inputs are active high. When enabled, one of the eight data output lines, Y0-Y7, is selectively activated (driven low), based on the binary state of the three select input lines.

In the printer, the 74S138 chip is used mainly as a chip select generator. Also used in the printer but not depicted here is the 74154 chip. This chip is an expanded version of the 74S138, with four select input lines and 16 data output lines.

4.4.2 Octal D-Type Flip-Flop (Figure 4-3)

The 74273 chip contains eight individual D-type flip-flops, with common clock and clear signals. When the clock changes from low to high, each flip-flop assumes a state corresponding to the state of its D input, regardless of the state the flip-flop was in before the clock transition. For example, when the D input of a given flip-flop is high at the clock transition time, that flip-flop will set, with its Q output moving (or staying) to the high state.

In the printer, the 74273 chip is used mainly as a latch for storing individual commands from the Processor CCA to the Interface CCA.

4.4.3 Octal Non-Inverting Tri-State Drivers (Figure 4-4)

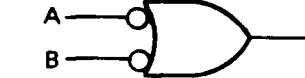
The 74244 chip contains a group of eight non-inverting buffered drivers. The chip is divided into two 4-buffer halves, with each half controlled by a common select signal. Thus, select signal 1G* controls buffers 1A1-1A4/1Y1-1Y4, while select signal 2G* controls buffers 2A1-2A4/2Y1-2Y4. When a select signal is active (low), its four buffers are enabled. When a buffer is enabled, its output, Y, follows its output A. For example, when 1G is low, 1Y1 follows 1A1, 1Y2 follows 1A2, etc. When a select signal is inactive (high), each of its four buffers is driven into the high output impedance state.

In the printer, the 74244 chip is used primarily as a bus driver.

4.4.4 Octal Inverting Tri-State Drivers (Figure 4-5)

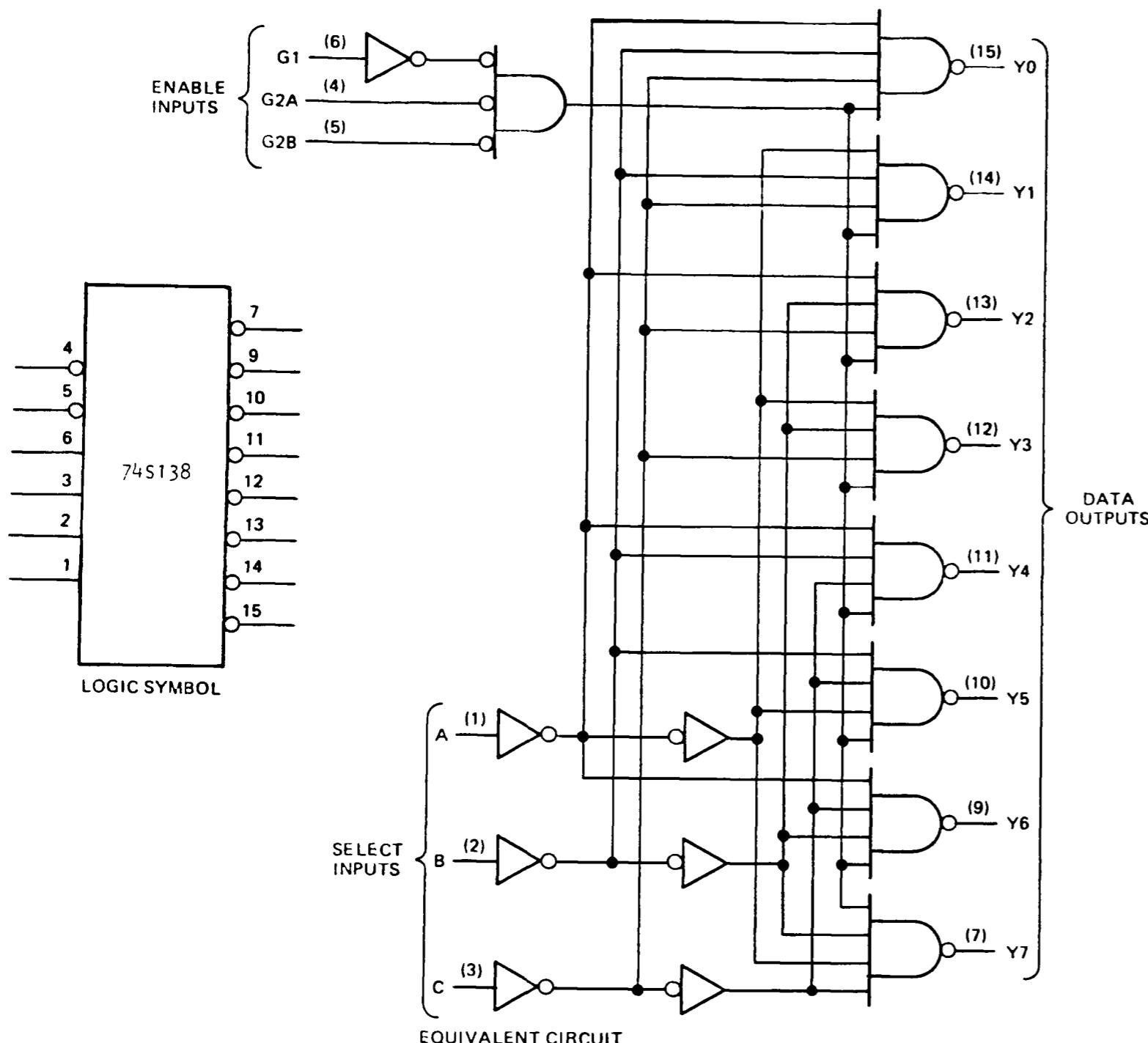
The 74240 chip contains a group of eight non-inverting buffered drivers. The chip is divided into two 4-buffer halves, with each half controlled as described in paragraph 4.4.3. It differs from the 74244 in that, in addition to buffering, the 74240 also provides logical inversion.

In the printer, the 74240 chip is used as an inverting bus driver.

LOGIC FUNCTION	AND SYMBOL	OR SYMBOL	INPUTS	OUTPUT
	A B	X	A B	X
NAND			H H L L	L H H H
NOR			H H L L	L L L H
AND			H H L L	H L L L
OR			H H L L	H H H L

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Figure 4-1. Common Functions of AND and OR Symbols



FUNCTION TABLE

INPUTS		OUTPUTS											
ENABLE	SELECT	C	B	A	Y ₀	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₆	Y ₇	
X	H	X	X	X	H	H	H	H	H	H	H	H	H
L	X	X	X	X	H	H	H	H	H	H	H	H	H
H	L	L	L	L	L	H	H	H	H	H	H	H	H
H	L	L	L	H	H	L	H	H	H	H	H	H	H
H	L	L	H	L	H	H	L	H	H	H	H	H	H
H	L	L	H	H	H	H	H	L	H	H	H	H	H
H	L	H	L	L	H	H	H	H	L	H	H	H	H
H	L	H	L	H	H	H	H	H	H	H	L	H	H
H	L	H	H	L	H	H	H	H	H	H	H	L	H
H	L	H	H	H	H	H	H	H	H	H	H	H	L

•G₂ = G_{2A} + G_{2B}

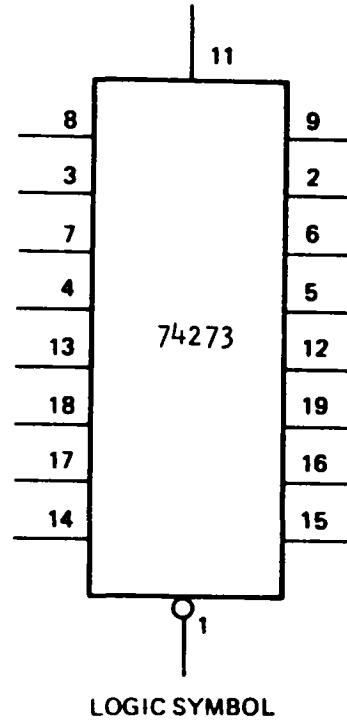
H = HIGH LEVEL, L = LOW LEVEL, X = IRRELEVANT

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Figure 4-2. Decoder/Demultiplexer Circuit (74138)

FUNCTION TABLE (EACH FLIP-FLOP)

INPUTS			OUTPUT Q
CLEAR	CLOCK	D	
L	X	X	L
H	↑	H	H
H	↓	L	L
H	L	X	Q_0



LOGIC SYMBOL

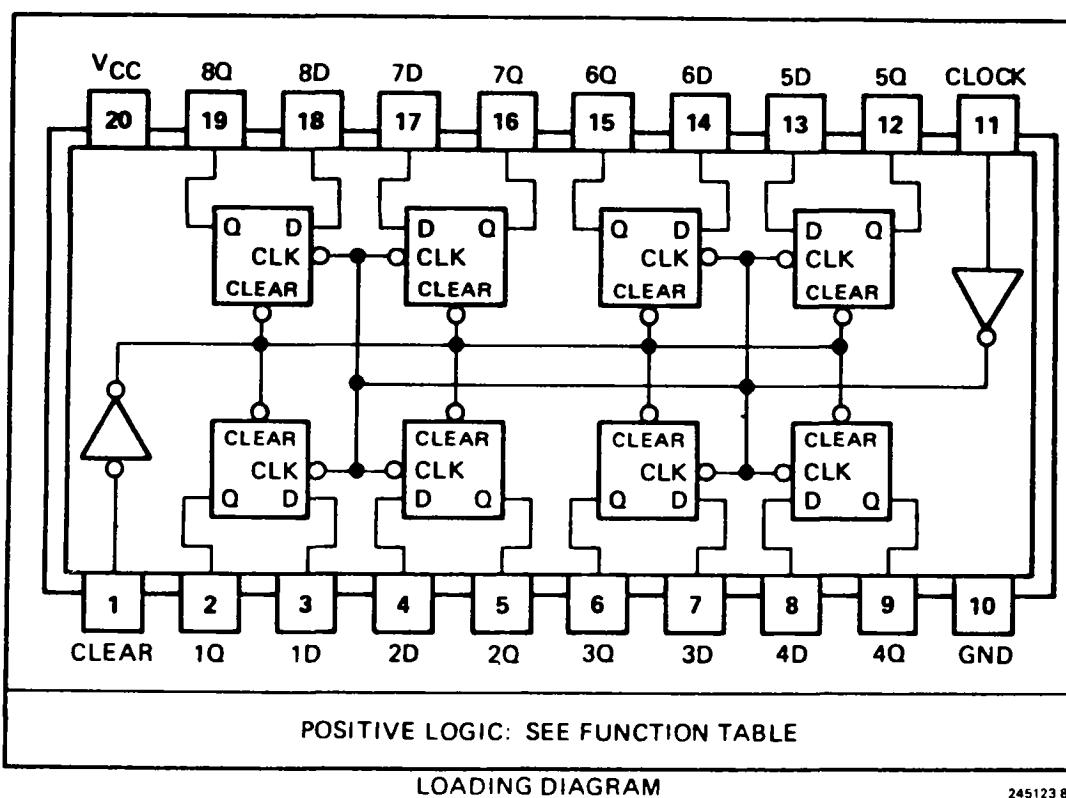
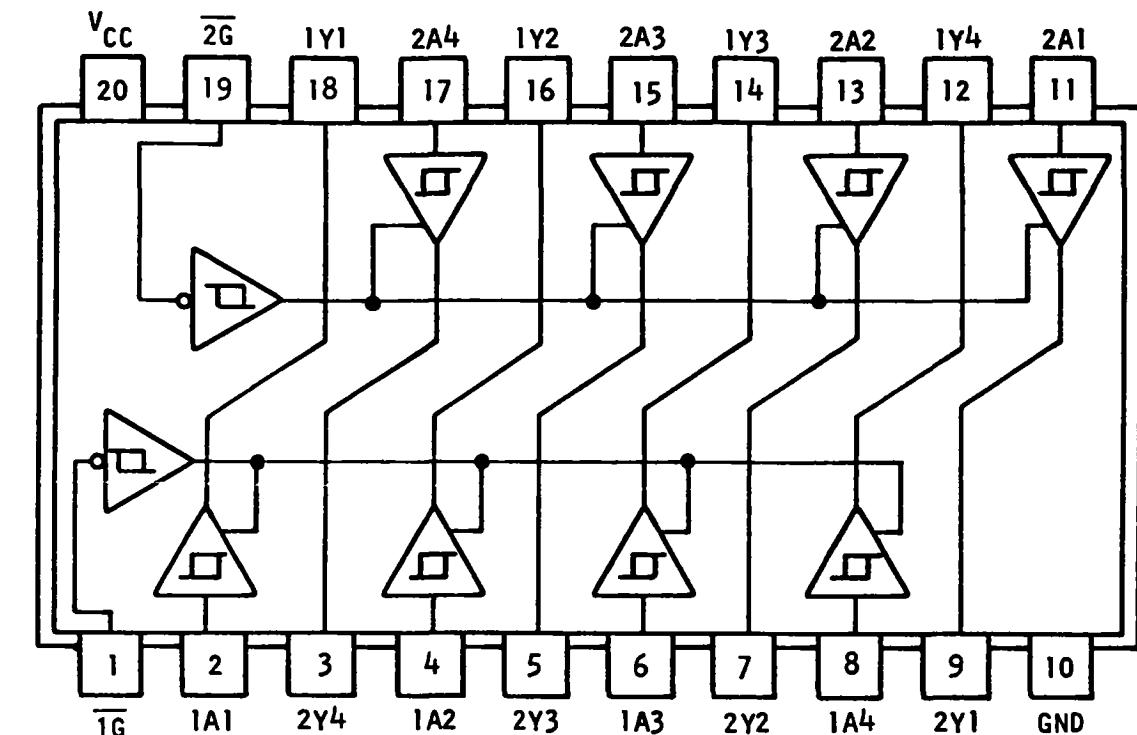


Figure 4-3. Octal D-Type Flip-Flop (74273)



FUNCTION TABLES

1G*	1A1	1Y1
L	L	L
H	H	H
1A2	1Y2	
L	L	
H	H	
1A3	1Y3	
L	L	
H	H	
1A4	1Y4	
L	L	
H	H	
1Y1 - 1Y4 ALL HIGH IMPEDANCE		

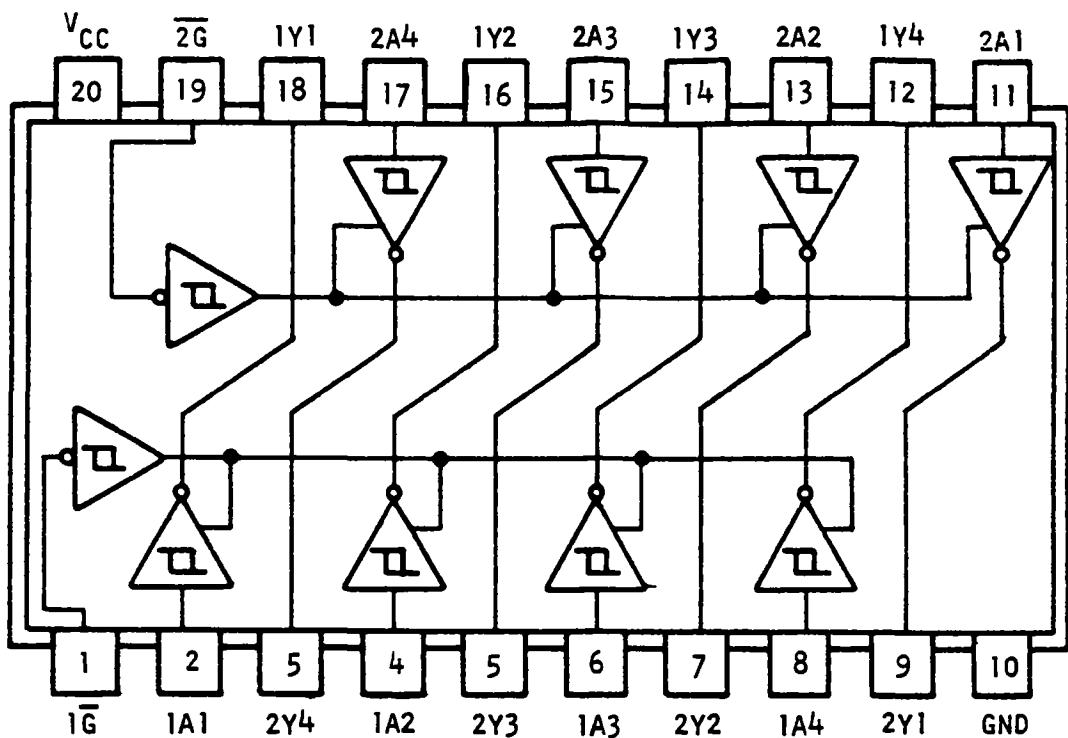
1Y1 - 1Y4
ALL HIGH IMPEDANCE

2G*	2A1	2Y1
L	L	L
H	H	H
2A2	2Y2	
L	L	
H	H	
2A3	2Y3	
L	L	
H	H	
2A4	2Y4	
L	L	
H	H	
2Y1 - 2Y4 ALL HIGH IMPEDANCE		

2Y1 - 2Y4
ALL HIGH IMPEDANCE

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Figure 4-4. Octal Non-Inverting (74LS244) Tri-State Drivers



FUNCTION TABLES

1G*	1A1	1Y1
L	L	H
	H	L
	1A2	1Y2
	L	H
	H	L
	1A3	1Y3
	L	H
	H	L
H	1A4	1Y4
	L	H
	H	L
1Y1 - 1Y4 ALL HIGH IMPEDANCE		

2G*	2A1	2Y1
L	L	H
	H	L
	2A2	2Y2
	L	H
	H	L
	2A3	2Y3
	L	H
	H	L
H	2A4	2Y4
	L	H
	H	L
2Y1 - 2Y4 ALL HIGH IMPEDANCE		

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Figure 4-5. Octal Inverting (74LS240) Tri-State Drivers

4.5 GLOSSARY OF MNEMONIC TERMS

Table 4-1 lists alphanumerically all logic terms used in the M200 and M120 printers, defines the meaning of each term, and identifies the source of the term by logic diagram figure number and sheet number. In addition to the standard DpC Parallel Interface CCA, table 4-1 includes all terms found within the optional Serial Interface CCA and DpC Centronics-Compatible Interface CCA; when the same term originates in all the Interface CCAs, all three sources are given. Since the DpC Long-line Parallel Interface CCA is functionally identical to the DpC Short-Line Parallel Interface CCA, all references made to the latter also apply to the DpC Long-Line Parallel Interface CCA.

Most signals listed in table 4-1 are applicable to both M120 and M200 printers. Signals that are used in the M200 printer but not in the M120 printer are so identified.

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS

Term	Definition	Source	
		Figure	Sheet
ACBIT1-ACBIT9	Address Counter bits of the DPC Parallel Interface CCA.	4-10	3
ACKNLG*	Acknowledge signal supplied by the DPC Centronics-Compatible Interface CCA to the user.	4-8	4
ADR0*-ADR15*	Inverted address bits generated by the Processor CCA.	4-11	2
ALM LMP	Generated by the Processor CCA, this signal turns on the ALARM indicator.	4-11	4
A0-A15	Processor CCA internal address bits.	4-11	2
A0-A15	Serial Interface CCA internal address bits.	4-9	2
ATxD+	Positive terminal of active transmit current loop generated by the Serial Interface CCA.	4-9	8
ATxD-	Negative counterpart of ATxD+.	4-9	8
AUTO LINE*	Option configuration switch signal used to enable the Auto Line Feed option.	4-8 4-9 4-10	5 6 4
BCAD*	Internal signal used to clear the Address Counter in the DPC Parallel Interface CCA. Active when the user transmits the BUFFER CLEAR signal.	4-10	3
BOF (Internal)	Status bit supplied by the Processor CCA and decoded in the DPC Parallel Interface CCA. Indicates that the current print line is at the bottom of form.	4-10	9
BOF (User)	An amplified version of the BOF (internal) supplied to the user.	4-10	8

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
BUFFER FULL*	Generated by any Interface CCA and supplied to the Processor CCA as a status bit, this signal indicates completion of the data load cycle.	4-8 4-9 4-10	4 6 5 (U23-2)
BUSY (Centronics)	DPC Centronics-Compatible Interface status signal supplied to the user. Indicates that the printer is unable to receive data.	4-8	4
BUSY (Serial)	Serial Interface CCA status signal supplied to the user in a RS232C system. Used in conjunction with DTR, it signifies the following: a. BUSY.DTR = Input buffer is 3/4 full. User may continue loading the current line of data and then stop. b. BUSY.DTR* = Printer is unable to receive data.	4-9	8
CBS	Internal current bias supply signal generated within the Wire Driver CCA.	4-13 4-14	2 2
CH1-CH12	Tape Channel signals supplied by the optional TCVFU and routed through any Interface CCA to the Processor CCA.	4-8 4-9 4-10	5 6 4
CH13	Line Strobe signal generated by the optional TCVFU and routed through any Interface CCA to the Processor CCA.	4-8 4-9 4-10	5 6 4
CLEAR	Derived from a delete code (177 oct) supplied by the user and used to clear the DPC Centronics-Compatible Interface CCA Address Counter.	4-8	6
CNTDIS*	Signal used to disable DPC Parallel Interface CCA Address Counter upon receipt of a condensed or expanded code.	4-10	6

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
CODE CONVERTING*	Option configuration switch signal used to enable the code conversion option.	4-8 4-9 4-10	5 6 4
COND	Status bit supplied by the Processor CCA and decoded in the DPC Centronics-Compatible Interface CCA. Active when the 10 CPI switch is set to 16 CPI, and effects condensed printing.	4-11	3
CONDENSED*	Status signal supplied by any Interface CCA to the Processor CCA. Generated when the user transmits a condensed code; also generated in the DPC Centronics-Compatible Interface CCA when the 10 CPI/16 CPI switch is set to 16 CPI.	4-10	6
CONTROL CODE	Internal DPC Centronics-Compatible Interface CCA signal used to terminate the load buffer cycle and generate signal BUFFER FULL. The CONTROL CODE signal is generated under any of the following conditions: a. On receipt of a paper motion control character. b. On receipt of the DAVFU STOP code. c. When the number of characters received equals the top count. d. With Auto termination enabled, when the number of characters equals 132 or 220 (condensed print).	4-8	8
CONTROL CODE*	Internal DPC Parallel Interface CCA signal used to terminate load buffer cycle and generate the BUFFER FULL signal. The CONTROL CODE* signal is generated under any of the following conditions:	4-10	6

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
CONTROL CODE* (Contd)	a. On receipt of any paper motion control character. b. On receipt of a DAVFU STOP code.		
CR*	Decoded Carriage Return signal in the DPC Centronics-Compatible Interface CCA.	4-8	8
CR DIS*	When disable CR is selected, this signal disables the character counter in the DPC Centronics-Compatible Interface CCA each time a carriage return code is received from the user.	4-8	8
CS*	Internal DPC Centronics-Compatible Interface CCA signal generated when the Processor CCA intends to read or write into the line buffer.	4-8	9
CS1*-CS8* (Interface)	Family of chip select signals generated in each Interface CCA by decoding the five most significant address bits of the Processor CCA. Not related to CS1*-CS16* of the Processor CCA.	4-8 4-9 4-10	9 3 8
CS1*-CS16* (Processor)	Family of chip select signals generated from the Processor CCA address bits and used internally within the Processor CCA. Not related to CS1*-CS8* of the Interface CCA.	4-11	3
CS12*	Logic term generated within the Serial Interface CCA by OR-ing CS1* with CS2*.	4-9	3
D1-D8 (Processor)	Bi-directional Processor CCA data bus, not related to D1-D8 of the Serial Interface CCA.	4-11	2
D1-D8 (Serial)	Main bi-directional data bus used internally within the Serial Interface CCA. Not related to D1-D8 of the Processor CCA.	4-9	2

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
DATA01- DATA08	Input data bits supplied by the user to the DPC Parallel Interface CCA.	4-10	6
DATA1- DATA8	Input data bits supplied by the user to the DPC Centronics-Compatible Interface CCA.	4-8	6
DATA STROBE	Strobe signal supplied by the user to the DPC Parallel Interface CCA in response to DEMAND. Validates stability of the input data bits.	4-10	8
DATA STROBE*	Strobe signal supplied by the user to the DPC Centronics-Compatible Interface CCA when the printer is not busy. Validates stability of the input data bits.	4-8	4
DAVFU FAULT*	Generated in any Interface CCA and supplied as a status bit (DBUF3) to the Processor CCA under the following conditions: a. When number of DAVFU tape channel characters exceeds 510. b. When number of DAVFU tape channel characters is odd. c. Parity Error (DPC Parallel Interface CCA and Serial Interface CCA only).	4-8 4-9 4-10	7 6 (U22-17) 7
DAVFU/ PRINT*	Generated in any Interface CCA and supplied as a status bit to the Processor CCA (DBUF4), this signal indicates whether the current information supplied by the user is print data (low) or DAVFU data (high).	4-10	3 9
DAVFU START	Generated in the DPC Parallel Interface CCA and DPC Centronics-Compatible Interface CCA upon receipt of a DAVFU start code.	4-8 4-10	6 6

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
DAVFU STOP	Generated in the DPC Parallel Interface CCA and DPC Centronics-Compatible Interface CCA upon receipt of a DAVFU stop code.	4-8 4-10	6 6
DB1-DB8	Intermediate data bus within any Interface CCA. Channels all data, other than status, between the Interface CCA and the Processor CCA.	4-8 4-9 4-10	3 6 9
DBUF1-DBUF8	Inter-CCA bi-directional data bus. Channels all data between the Processor CCA and any Interface CCA and between the Processor CCA and the status display. Also used internally within the Processor CCA.	4-8 4-9 4-10 4-11	3 6 9 3
DBUS1-DBUS8	Intermediate data bus within the Processor CCA.	4-11	3
DEMAND (Internal)	Internal signal within the DPC Parallel Interface CCA generated during the load buffer cycle each time DATA STROBE goes low. Prerequisite for generating DEMAND supplied to the user.	4-10	5
DEMAND (Output)	Output signal generated by the DPC Parallel Interface CCA and supplied to the user for requesting data. Raised once per character.	4-10	8
DESELECT	Signal generated within the DPC Centronics-Compatible Interface CCA from the deselect code (023 oct) supplied by the user. When active, places the printer off line.	4-8	8
DET POS	Position Detect signal supplied by the column 1 sensor to the Motor Driver CCA.	4-12	3
DISPLAY LD*	Display indicator enable signal supplied by the Processor CCA to the status display indicators.	4-11	3

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
DPC/CEN*	Indicates whether or not the printer is configured with a DPC Centronics-Compatible Interface CCA. Supplied as a status bit (DBUF8) to the Processor CCA. 0 = Centronics 1 = DPC Parallel or Serial	4-8 4-9 4-10	3 6 9
DSR	Data Set Ready status signal supplied by the user to an RS232-configured Serial Interface CCA. When off (low), indicates that the printer must disregard all other interface signals. Signal may be overridden by a manual switch.	4-9	8
DTR	Data Terminal Ready status signal supplied by an RS232-configured Serial Interface CCA to the user. When high, indicates the following: a. Printer power is on. b. No printer faults exist. c. Printer is on line. d. Input buffer is not full.	4-9	8
ENC INT REQ*	Interrupt signal generated when the Processor CCA detects an encoder mark.	4-11	4
ENRDR*	Generated by the Processor CCA, and used to enable the optional TCVFU tape reader.	4-11	4
EXPANDED	Generated by any Interface CCA upon detection of an EXPANDED code supplied by the user, and applied as a status bit (DBUF7) to the Processor CCA.	4-8 4-10	6 6

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
EXPANDED DIS*	Option configuration switch signal used, when low, to disable the expanded print option.	4-8 4-9 4-10	5 6 4
FAULT*	Signal supplied by the DPC Centronics-Compatible Interface CCA to the user indicating one of the following fault conditions: a. Printer is out of paper. b. Shuttle is not moving. c. Printer is deselected.	4-8	4
FF9	Parity error detect signal generated in the DPC Parallel Interface CCA each time a parity error is detected. Used to clock PARITY ERROR flip-flop U2.	4-10	2
FLSS1*-FLSS4*	FORMS LENGTH SELECT switch 4-bit BCD output supplied to the Processor CCA.	4-16	2
GO*/STOP	Shuttle motor control signal generated in the Processor CCA. When low, motor is turned on; when high, motor is turned off.	4-11	4
ICS1*-ICS16*	Chip select signals derived from the Serial Interface CCA internal address bus.	4-9	3
IMEMR*	Serial Interface CCA, internal memory read enable signal.	4-9	2
IMEMW*	Serial Interface CCA, internal memory write enable signal.	4-9	2
INPUT PRIME*	User-generated signal used to clear the line buffer and interface logic in the DPC Centronics-Compatible Interface CCA.	4-8	6

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
LD	Fault status signal decoded in the DPC Centronics-Compatible Interface CCA from bit DBUF6 supplied by the Processor CCA. Implies that the shuttle is not moving or the printer is deselected. Used to generate interface signal FAULT*.	4-8	3
LDBUF-PULSE*	Pulses generated in the DPC Parallel Interface CCA and DPC Centronics-Compatible Interface CCA on the low-to-high transition of the LOAD BUFFER signal. Used to initialize the interface logic and set flip-flop load.	4-10	5 4
LOAD	Internal signal generated within the DPC Parallel Interface and DPC Centronics-Compatible Interface CCAs. Defines the duration of the load buffer cycle.	4-8 4-10	4 5
LOAD BUFFER	Communication signal supplied by the Processor CCA on bit DBUF1, and decoded in any Interface CCA. Initiates the data load cycle.	4-8 4-9 4-10	3 6 9
MEM ADD 1	Least significant bit of the DPC Centronics-Compatible Interface CCA address counter.	4-8	2
MEMR	Memory read enable signal generated in the Processor CCA.	4-11	2
MEMW	Memory write enable signal generated in the Processor CCA.	4-11	2
MEMR/W	Internal signal in the DPC Parallel Interface CCA, equivalent to MEMR+MEMW. Used to enable the chip select logic.	4-10	9
NDB1-NDB8	Internal data bus in the DPC Centronics-Compatible Interface CCA. Channels ASCII-coded user data.	4-8	6

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
OFF LINE ACK	On/Off Line acknowledge signal generated in the DPC Centronics-Compatible Interface CCA and supplied on bit DBUF2 to the Processor CCA.	4-8	4
ON LINE (Processor)	Status signal indicating that the printer is on line. Generated in the Processor CCA as status bit DBUF3 and decoded in any Interface CCA.	4-8 4-9 4-10	3 6 9
ON LINE (Interface)	Status signal supplied by the DPC Parallel Interface CCA to the user.	4-10	8
ON LINE AK*	On/Off Line acknowledge signal supplied by the DPC Parallel Interface CCA to the Processor CCA on bit DBUF2.	4-10	9
ON LINE LAMP	Signal generated in the Processor CCA and used to turn on the ON LINE indicator on the Operator Control Panel.	4-11	5
ON LINE USER	Intermediate signal in the DPC Parallel Interface CCA. Used to generate the ON LINE signal supplied to the user.	4-10	5
ON/OFF LINE*	Output of the ON LINE switch on the Operator Control Panel. Used to toggle ON LINE FF in the Processor CCA.	4-16	1
OSC2	2-mHz clock signal generated by the Processor CCA.	4-11	2
OSC18	18-mHz clock signal generated by the Processor CCA.	4-11	2
OSCXT	100-kHz reference clock supplied by the DPC Centronics-Compatible Interface CCA to the user.	4-8	4

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
PAPER MOVING	Status signal supplied by the Processor CCA to the DPC Parallel Interface CCA on bit DBUF6, and from there to the user.	4-10	9
PARITY BIT	User-supplied input to the DPC Parallel Interface CCA. When the parity option is enabled, this signal codes the odd/even bit content of the input character.	4-10	8
PARITY EN*	Option configuration switch output signal. When low, enables the parity option.	4-10	4
PARITY ERROR	Generated in the DPC Parallel Interface CCA when a parity error is detected. Once generated, PARITY ERROR remains active for the duration of the data load cycle, and is reported as a DAVFU FAULT status bit on DBUF3 to the Processor CCA.	4-10	2
PARITY EVEN	Option configuration switch output signal used in conjunction with PARITY EN* to specify type of parity in the DPC Parallel Interface CCA: High = Even Parity Low = Odd Parity	4-10	4
PAPER INST	User-supplied input signal to the Interface CCAs. Indicates that the input data is either a VFU type paper instruction or a DAVFU START or DAVFU STOP code.	4-8 4-10	6 8
PE	Paper empty status bit supplied by the Processor CCA on DBUF8 to the DPC Centronics-Compatible Interface CCA, and from there to the user. Not used in the DPC Parallel Interface CCA.	4-8	3

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
PERF SKIP1*, PERF SKIP2*	Two-bit perforation skip code supplied by the option configuration switches. Specifies the number of perforation skip lines.	4-8 4-9 4-10	5 6 4
PHASE 1*, PHASE 2*, PHASE 3*	Stepping motor control signals generated in the Processor CCA. Each signal controls a group of motor drive circuits associated with one of the three phase windings.	4-11	4
PL/DA TOP CNT	DAVFU top count signal generated in the DPC Parallel Interface CCA. Equivalent to signal 255 in the DPC Centronics-Compatible Interface CCA.	4-10	7
PRINT TOP CNT	Indicates that the DPC Parallel Interface CCA has received the maximum number of print characters and disables the address counter until receipt of a paper motion control character.	4-10	7
PS	Power protection signal. When power is first turned on, disables the motor and wire driver circuits until the +5V supply has come up to a safe level.	4-12	2
READY (Processor)	Status signal supplied by the Processor CCA to any Interface CCA on DBUF2. Indicates that the printer can be placed on line.	4-8 4-9 4-10	3 6 9
READY (Interface)	Status signal supplied by the DPC Parallel Interface CCA to the user. Amplified version of the Processor-supplied READY signal.	4-10	8
REC LINE SIG DET	User-generated RS232 signal supplied to the Serial Interface CCA. Indicates that the data communication equipment is receiving a signal which meets its suitability criteria.	4-9	8

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
RIGHT*/ LEFT	Shuttle motor direction signal supplied by the Processor CCA to the Motor Driver CCA. Right when low; left when high.	4-11	4
RMTR*	Ribbon motor control signal supplied by the Processor CCA to the Motor Driver CCA. When low, motor is turned on; when high, motor is turned off.	4-11	4
RTS	Request to Send output signal supplied by an RS232-configured Serial Interface CCA to the user.	4-9	8
RxD	Received data input supplied by the user to an RS232-configured Serial Interface CCA. Contains the serial data stream.	4-9	8
RxD+, RxD-	Receive current loop terminals supplied by the user to the Serial Interface CCA.	4-9	6
SEL/DES	Decoded signal generated in the DPC Centronics-Compatible Interface CCA indicating that the input character supplied by the user is either a SELECT or DESELECT code.	4-8	6
SELECT	Status signal generated in the DPC Centronics-Compatible Interface CCA upon receipt of a SELECT code, provided that the printer is in READY state. Applied to the Processor CCA on DBUF5.	4-8	3
SELECTIN	Decoded signal generated in the DPC Centronics-Compatible Interface CCA indicating that the input character supplied by the user is a SELECT code.	4-8	8

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
SELF TEST*	Switch-selected signal obtained from the Operator Control Panel. When low, places the printer in the self-test mode.	4-16	1
SKPV	SKIP COUNT*/VALID PRINT signal generated in the DPC Centronics-Compatible Interface CCA. When low, indicates that the character received is not a print or paper motion character, and inhibits the address counter.	4-8	7
SLCT	Equivalent to SELECT, supplied by the DPC Centronics-Compatible Interface CCA to the user.	4-8	4
STBINST*	Stored condition of DATA STROBE generated in the DPC Parallel Interface CCA. Extends the duration of the strobe until DEMAND goes low.	4-10	7
STEP*	Stepping motor control signal generated in the Processor CCA. When low, enables the circuits that control the common side of the stepping motor.	4-11	4
STROBE WRITE	Internal DATA STROBE signal generated within the DPC Parallel Interface CCA, normally following DATA STROBE. When DATA STROBE is supplied in a pulsed mode, the duration of STROBE WRITE is extended until DEMAND goes low.	4-10	5
TB8	Logic term that controls bit 8 of the character stored in the DPC Parallel Interface CCA line buffer. When the user supplies 8 data bits per character, TB8 follows bit 8 of the user data. When the user supplies 7 data bits per character, TB8 is always high (logical "1").	4-10	2

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
TCVFU*	Option configuration switch output signal. When low, enables the TCVFU option.	4-8 4-9 4-10	5 6 4
TOF (Internal)	Status signal supplied by the Processor CCA on DBUF4 to the DPC Parallel and Serial Interface CCAs. When active, indicates that paper is at the top of form position.	4-9 4-10	6 9
TOF (User)	An amplified version of the TOF (Internal) supplied to the user.	4-10	8
TOFSW*	TOP OF FORM switch output signal. When switch is pressed, the signal goes low (active), causing paper to move to the top of the next form.	4-16	2
TPI	Qualified version of paper instruction signal PI, generated in both the DPC Centronics-Compatible Interface CCAs. Follows PI supplied by the user when either DAVFU or TCVFU option has been enabled.	4-8 4-10	6 2
TRRQ*	TCVFU read-request signal generated by the optional TCVFU when the operator presses the read switch. Signal is routed through the applicable Interface CCA to the Processor CCA.	4-8 4-9 4-10	6 5 4
TRRQSW*	Read-request signal generated by the TCVFU read switch and applied to the TCVFU CCA.	4-18	1
TxD	Generated in the USART chip of the Serial Interface CCA, this signal enables the active current loop ATxD+, ATxD-.	4-9	8
TxD+, TxD-	Passive output current loop terminals of the Serial Interface CCA. Loop is closed when the printer is not busy.	4-9	8

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
USER DEM	Logic term developed in the DPC Parallel Interface CCA from the internal DEMAND signal and used to generate DEMAND supplied to the user. Allows the printer to communicate with the user in both the pulsed and handshake modes.	4-10	7
VFC	Generated in the DPC Centronics-Compatible Interface CCA upon receipt of a PI-coded paper motion control character.	4-8	6
WR*	Write enable term generated in the DPC Centronics-Compatible Interface CCA. Allows user or Processor CCA data to be written into the line buffer.	4-8	9
WRITE*	Write enable term generated in the DPC Parallel Interface CCA. Allows user data to be written into the line buffer.	4-10	5
1L*-7L*	Left wire register bits, generated in the Processor CCA**.	4-11	5
1L0-7L0	Left wire driver bits, negative terminals**.	4-13	3
1L1-7L1	Left wire driver bits, positive terminals**.	4-13	3
1R*-7R*	Right wire register bits, generated in the Processor CCA.	4-11	8
1R0-7R0	Right wire driver bits, negative terminals.	4-13 4-14	2 3
1R1-7R1	Right wire driver bits, positive terminals.	4-13 4-14	2
6/8* LPI	Vertical line pitch select signal controlled by the optional LPI select switch on the operator control panel and applied to the Processor CCA. When high, vertical line pitch is 6 LPI; when low, vertical line pitch is at 8 LPI.	4-16	1

** M200 only

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
7*/8 BIT	Option configuration switch output signal that specifies the number of bits per character supplied by the user. When low, number of bits is 7; when high, number of bits is 8.	4-8 4-9 4-10	5 6 4
10/16* PITCH	Horizontal line pitch select signal controlled by the optional LPI switch on the Operator Control Panel and applied to the Processor CCA. When high, horizontal line pitch is 10/inch; when low, horizontal line pitch is 16/inch.	4-16	1
10*/16 SHTL	Generated in the Processor CCA, this signal specifies the speed of the shuttle motor. When low, shuttle moves at 34 ips; when high, shuttle moves at 20.4 ips.	4-11	4
11/12* FORM	Option configuration switch output signal that specifies 11" or 12" form length. When high, form length is 11 inches; when low, form length is 12 inches. If the printer is equipped with the optional FORM LGTH switch, form length is determined by that switch setting regardless of the value of signal 11/12* FORM.	4-10 4-9	4 6
132/220	Top Count signal generated in the DPC Centronics-Compatible Interface CCA when the character count equals either 132 (normal or expanded print) or 220 (condensed print). If auto print is enabled, this signal causes the DPC Centronics-Compatible Interface CCA to stop loading data and generate a BUFFER FULL signal.	4-8	2

TABLE 4-1. GLOSSARY OF MNEMONIC TERMS (Contd)

Term	Definition	Source	
		Figure	Sheet
222	Signal generated in the DPC Centronics-Compatible Interface CCA indicating that the number of print characters received from the user is 222, the absolute maximum. Characters beyond this number are not registered until the user transmits a paper motion control character. 222 is the equivalent to PBTCNT in the DPC Parallel Interface CCA.	4-8	2
510	Signal generated in the DPC Centronics-Compatible Interface CCA indicating that the number of DAVFU characters (not counting START) is 510, the absolute maximum. If the next character is not a DAVFU STOP code, a DAVFU FAULT condition exists. See PL/DA TOP CNT.	4-8	2

4.6 LIST OF DIAGRAMS

Table 4-2 lists by figure number, the complement of power distribution, power supply, power regulation, and logic diagrams contained in this section of the manual.

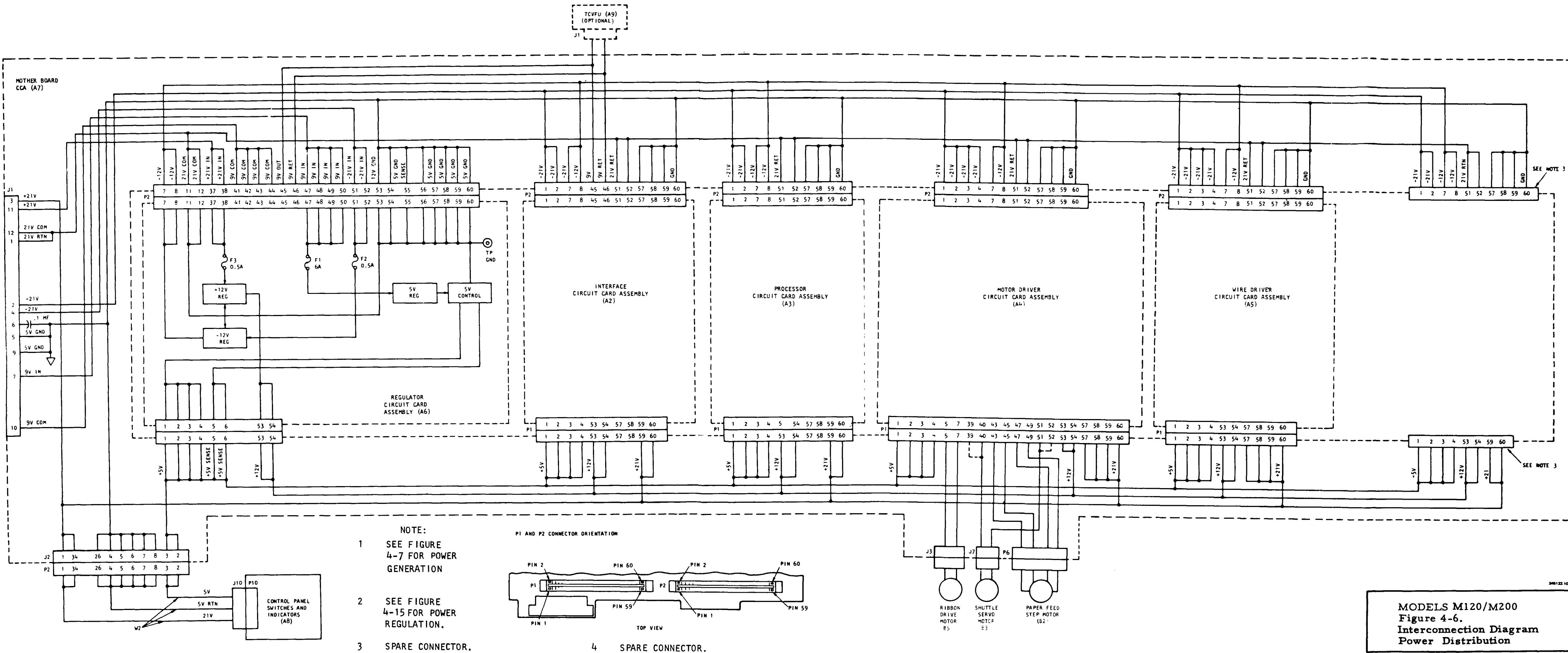
TABLE 4-2. LIST OF DIAGRAMS

Figure No.	Title	Page	Number of Sheets
4-6	Interconnection Diagram, Power Distribution	4-16	1
4-7	Universal Power Supply	4-17	2
4-8	DPC Centronics-Compatible Interface	4-19	9
4-9	Serial Interface	4-28	8
4-10	Short Line Parallel Interface	4-36	9
4-11	Processor	4-45	5
4-12	Motor Driver	4-50	4
4-13	M200 Wire Driver	4-54	3
4-14	M120 Wire Driver	4-57	2
4-15	Regulator	4-59	1
4-16	Control Panel	4-60	1
4-17	Mother Board (Wire List)	4-61	3
4-18	TCVFU	4-64	1

4.7 SIGNAL ORIGIN/DESTINATION

On each logic diagram sheet, input and output signals are cross-referenced by origin and destination, respectively. Cross-referencing between sheets of the same figure is denoted by an alphanumeric code. The first digit (or first two digits) of the code refers to the sheet number, and the other two digits direct the reader to an alphanumeric coordinate within the referenced sheet. Signals originating in or destined for another figure are denoted by a figure number, and, where applicable, also by the sheet number.

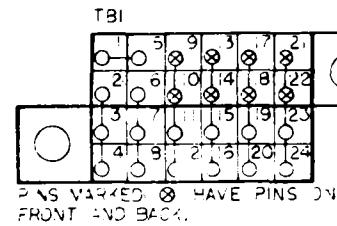
Example: On sheet 3 of figure 4-11, logic term CS7-10 is denoted by the three-digit code 5C8. The digit "5" directs the reader to sheet 5 of figure 4-11, and the digits "C8" direct the reader to coordinate C8 of sheet 5.



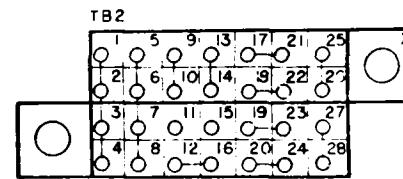
8 **7** **6** **5** **4** **3** **2** **1**

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PINS MARKED \otimes HAVE PINS ON
FRONT AND BACK.



UNIVERSAL TRANSFORMER CONFIGURATION CHART

UNIVERSAL TRANSFORMER CONFIGURATION CHART									
WIRE HARNESS	COLOR CODE	115V, 50Hz		115V, 60Hz		250V, 50Hz		250V, 60Hz	
		FROM	TO	FROM	TO	FROM	TO	FROM	TO
	BLK/WHT	TBI-6F	TB2-4	TBI-6F	TB2-4	TBI-6F	TB2-4	TBI-6F	TB2-4
	RED	TBI-2F	TB2-8	TBI-2F	TB2-8	TBI-2F	TB2-16	TBI-2F	TB2-16
	VIO/WHT	TB2-21	CRI-AC	TB2-22	CRI-AC	TB2-21	CRI-AC	TB2-22	CRI-AC
	WHT	TB2-24	CRI-AC	TB2-23	CRI-AC	TB2-24	CRI-AC	TB2-23	CRI-AC
WHT/ORN		TB2-26	F2	TB2-27	F2	TB2-26	F2	TB2-27	F2
UNIVERSAL TRANSFORMER	BRN/WHT	TRANS.	TB2-7	TRANS.	TB2-13	TRANS.	TB2-12	TRANS.	TB2-13
	BRN/YEL		TB2-14		TB2-7		TB2-14		TB2-12
	BRN		TB2-3		TB2-3		TB2-7		TB2-7
	ORN / WHT		TB2-6		TB2-9		TB2-6		TB2-9
	ORN / YEL		TB2-10		TB2-6		TB2-10		TB2-6
	ORN		TB2-2		TB2-2		TB2-2		TB2-2
	RED/WHT		C 4				C 4		
	RED/BLK				C 4				C 4
	RED		C 4		C 4		C 4		C 4
	BLU/WHT		TB2-17		TB2-17		TB2-17		TB2-17
	BLU		TB2-18		TB2-18		TB2-18		TB2-18
	BLU/BLK		TBI-17F		TBI-17F		TBI-17F		TBI-17F
	BLU		TB2-19		TB2-19		TB2-19		TB2-19
	BLU/WHT		TB2-20		TB2-20		TB2-20		TB2-20
	YEL/WHT		TB2-25		TB2-25		TB2-25		TB2-25
	YEL/BLK		TB2-28		TB2-28		TB2-28		TB2-28
	YEL		CR2-AC		CR2-AC		CR2-AC		CR2-AC
FI		30 ASB		30 ASB		15 ASB		15 ASB	

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	TBI		
	COLOR CODE	FROM	TO
POWER HARNESS	GRN	P10-6	TBI-1IF
	BLU	C2-NEG	TBI-2IF
	WHT	C1 -POS	TBI-13F
	BLK	C2 -POS	TBI-18F
AC LINE HARNESS	GRN/YEL	SIDE FRAME	LINE COVER
FAN HARNESS	GRN/YEL	LINE COVER	TBI-12F
	BLK	FAN	TB2-1
	BLK	FAN	TB2-5

PIO GND CONFIGURATION			
COLOR CODE	FROM	TO	VARIABLES
GRN	TBI-IOF	PIO-5	DIRECT GND
GRN	TBI-5F	PIO-5	CAPACITIVE GND
GRN	TBI-IIF	PIO-6	

FIGURE 4-7. (SH 1 OF 2)
UNIVERSAL POWER SUPPLY

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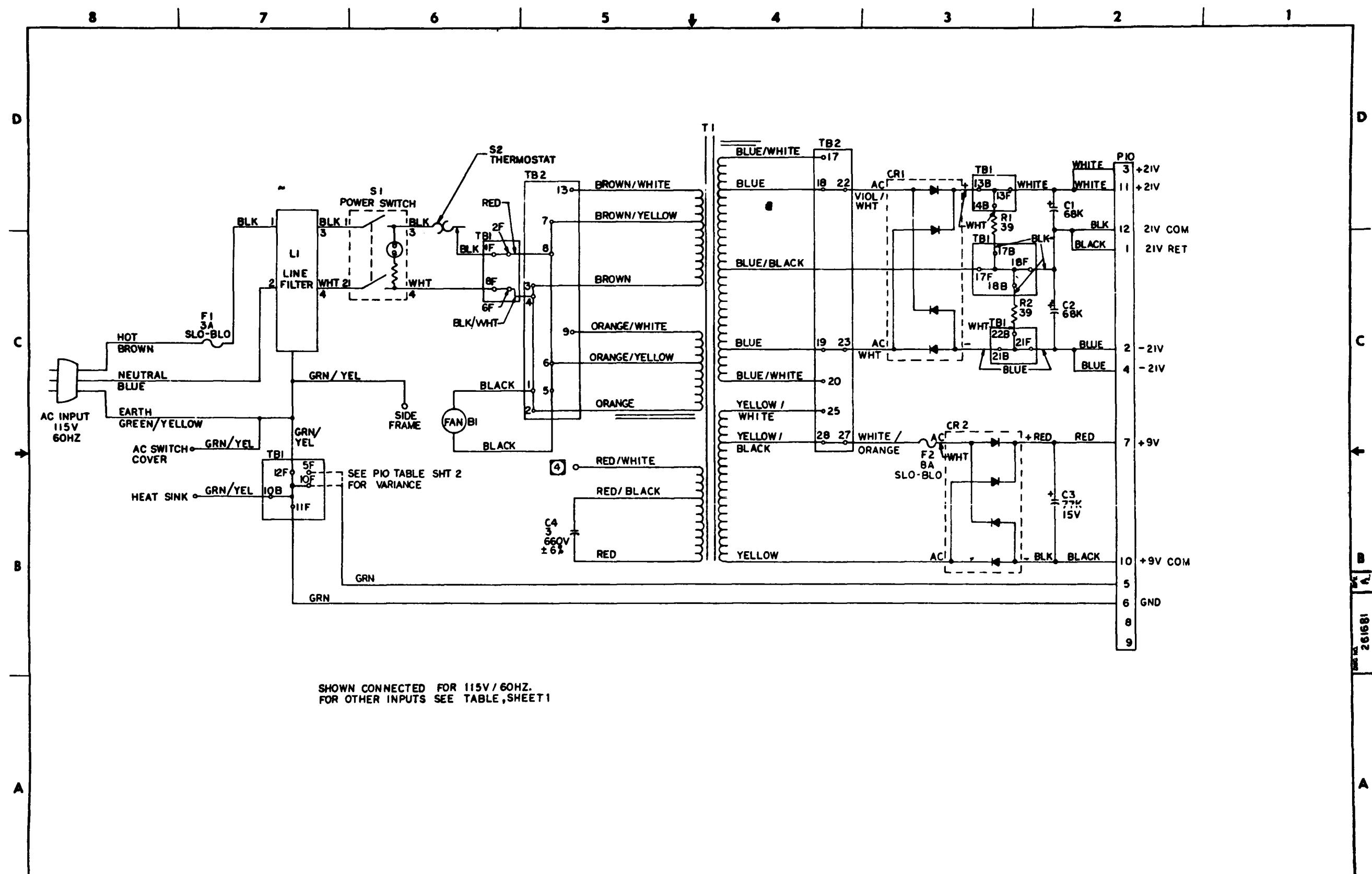


FIGURE 4-7. (SH 2 OF 2)
UNIVERSAL POWER SUPPLY

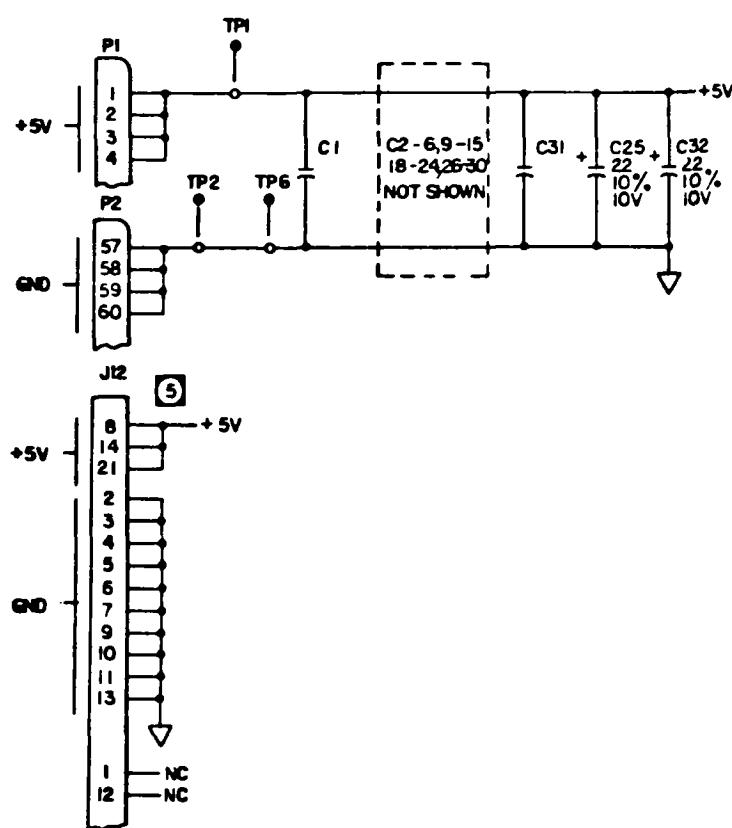
8 | 7 | 6 | 5 | ↓ | 4 | 3 | 2 | 1

NOTES: (UNLESS OTHERWISE SPECIFIED).

1. ALL RESISTANCE VALUES ARE IN OHMS, 5%, 1/4W.
2. ALL RESISTORS ARE 7.5K.
3. ALL CAPACITANCE VALUES ARE IN UF, +80%,-20%,50V.
4. ALL CAPACITORS ARE 0.1 UF.

(5) COMPONENTS NOT INSTALLED:

J12: TCVFU OPTION, SEE INSTALLATION 249431.
MEM 2: CODE CONVERSION OPTION, SEE INSTALLATION DRAWING.



SI	FUNCTION
A	SPARE
B	OFF-DISABLE AUTO PRT ON-ENABLE AUTO PRT
C	ON-DISABLE 220 CHAR BUFFER OFF-ENABLE 220 CHAR BUFFER
D	ON-ENABLE CR TERM CODE OFF-DISABLE CR TERM CODE

U48	74LS138	801585	8	16
U44	74LS390	801999	8	16
U37	74LS273	801550	10	20
U36, 53	8304	801805	10	20
U34, 35	74LS197	801963	7	14
U31-33, 49	74LS14	801533	7	14
U28	74221	801023	8	16
U9, 21-23, 38, 51	74LS244	801716	10	20
U8, 38, 45, 52	74LS240	801691	10	20
U14	74LS132	801800	7	14
U13, 55	74LS10	801531	7	14
U12, 15, 29, 40, 57	74LS08	801530	7	14
U11, 26, 42	74LS00	801528	7	14
U10, 16, 24, 25, 30, 43	74LS112	801813	8	16
U8, 20	2114	801614	9	18
U7	74LS125	801812	7	14
U6	74LS32	801536	7	14
U4	74LS20	801534	7	14
U3	74LS74	801540	7	14
U2, 41	74LS02	801584	7	14
U1, 27, 56	74LS04	801529	7	14
MEM 3	74S287	810059	8	16
MEM 1	74S472	815004	10	20
REF DES	DEVICE TYPE	DP NO	CV	+5V
DEVICE CHART				

FIGURE 4-8. (SH 1 OF 9)
CIRCUIT CARD ASSEMBLY
DPC CENTRONICS-COMPATIBLE
INTERFACE

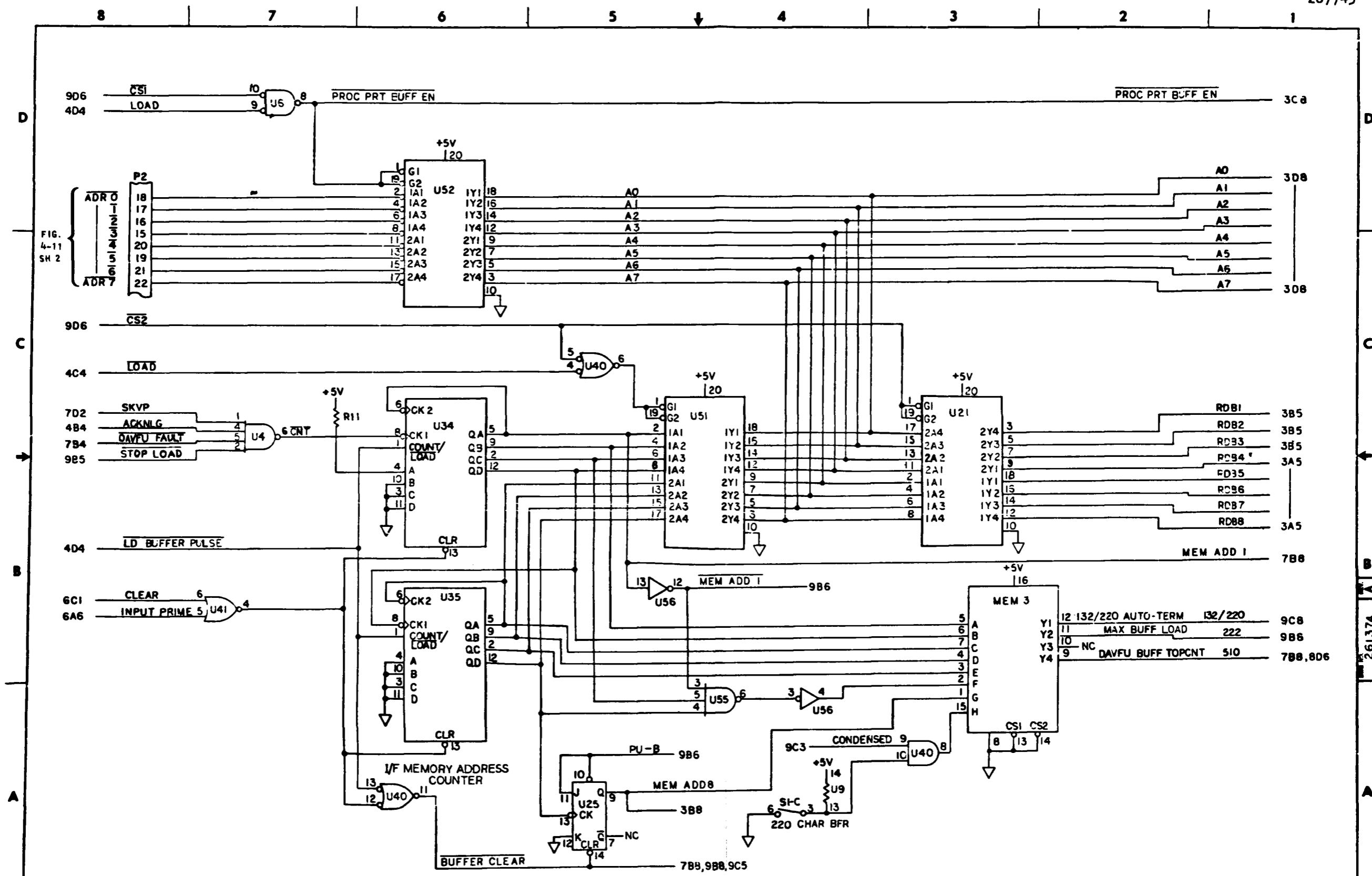
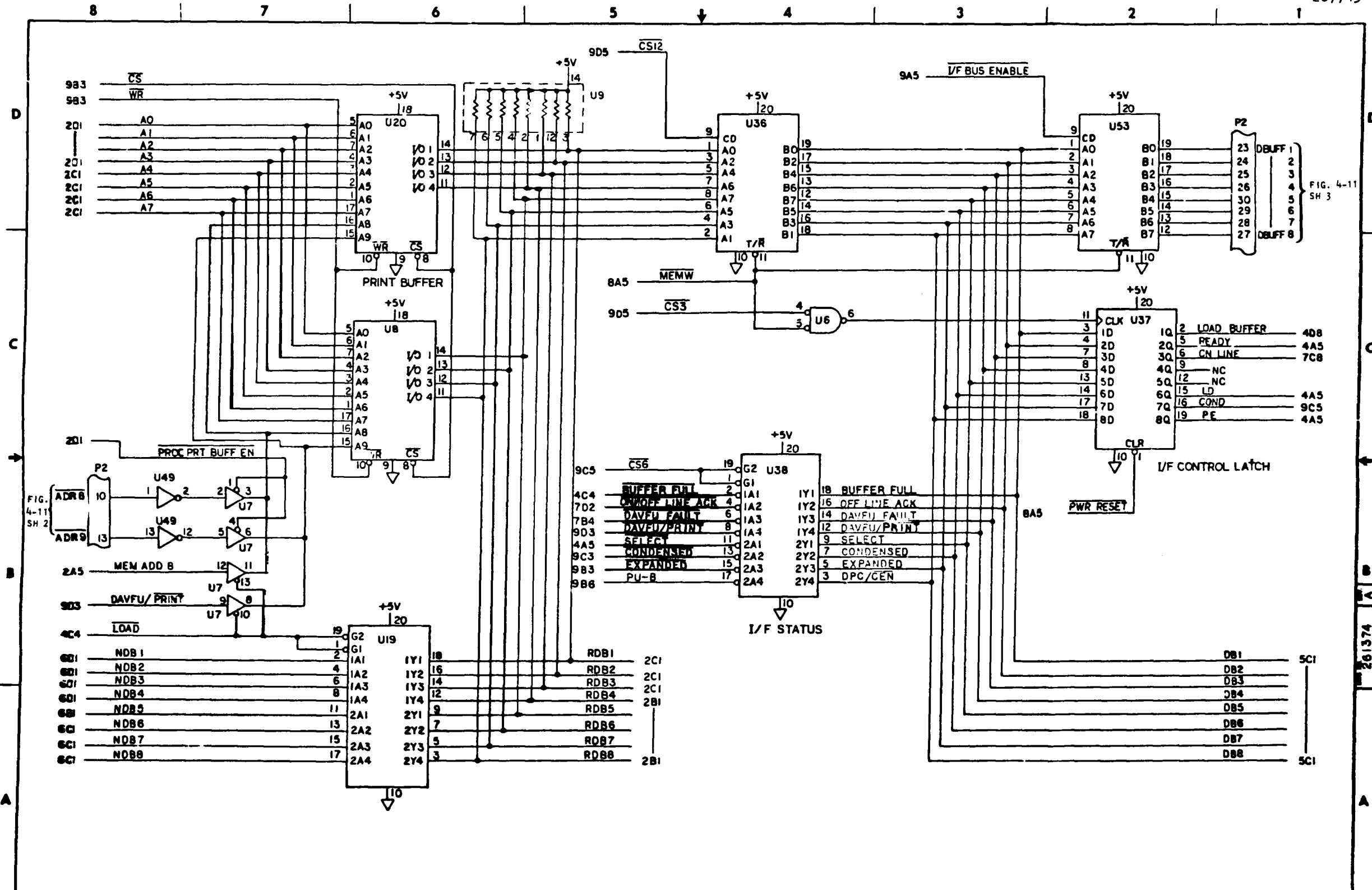


FIGURE 4-8. (SH 2 OF 9)
CIRCUIT CARD ASSEMBLY
DPC CENTRONICS-COMPATIBLE
INTERFACE



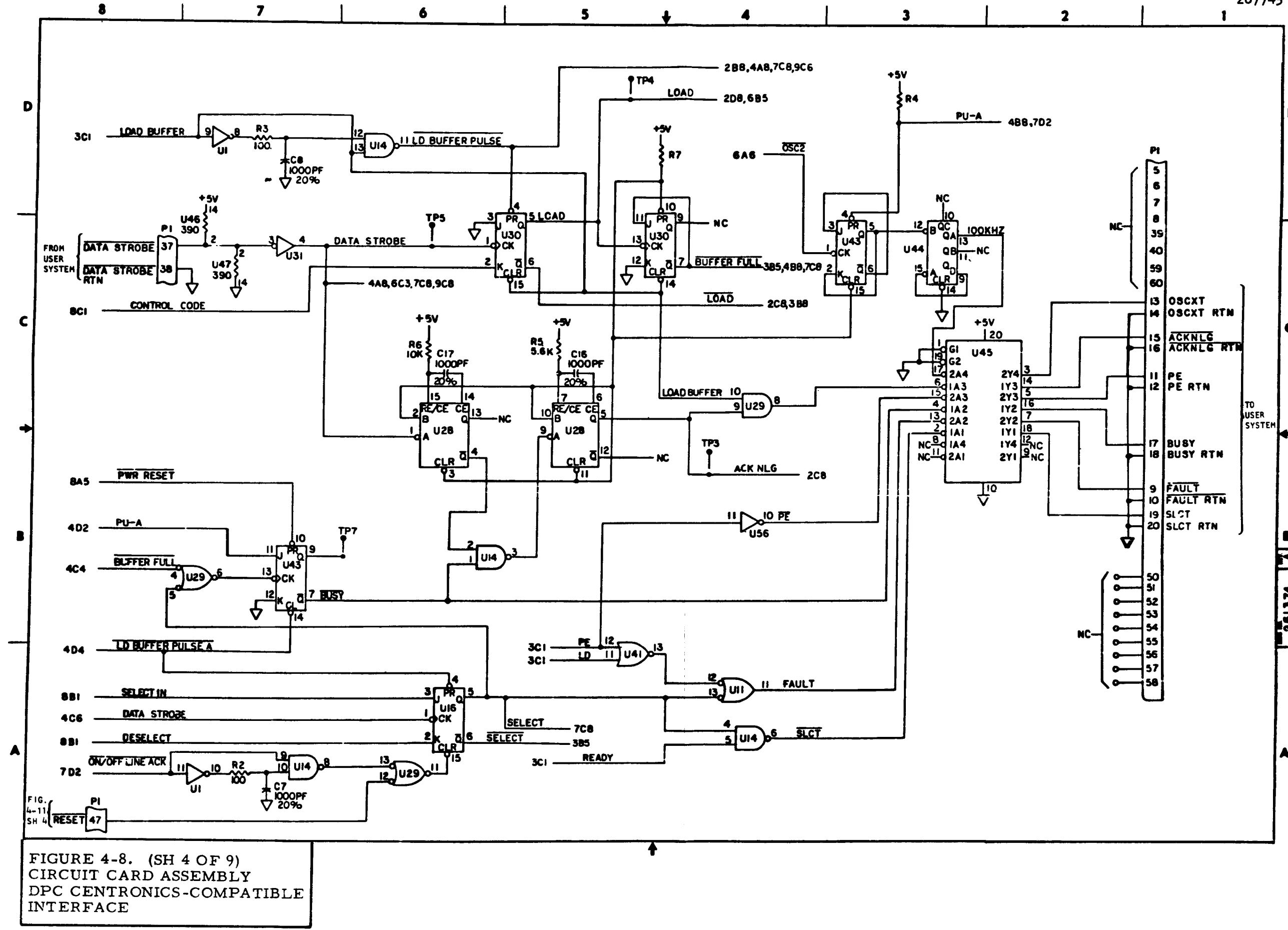


FIGURE 4-8. (SH 4 OF 9)
CIRCUIT CARD ASSEMBLY
DPC CENTRONICS-COMPATIBLE
INTERFACE

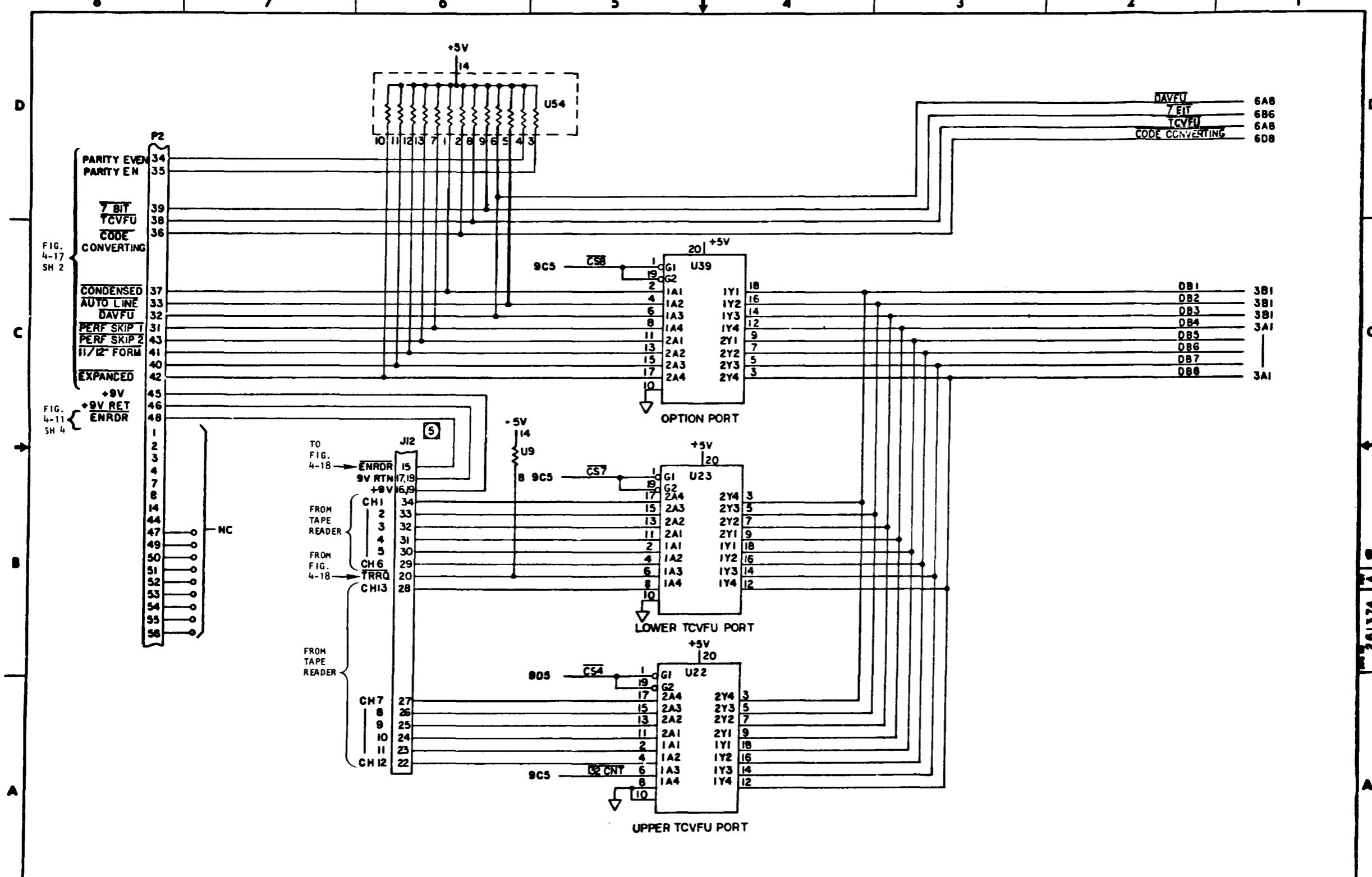
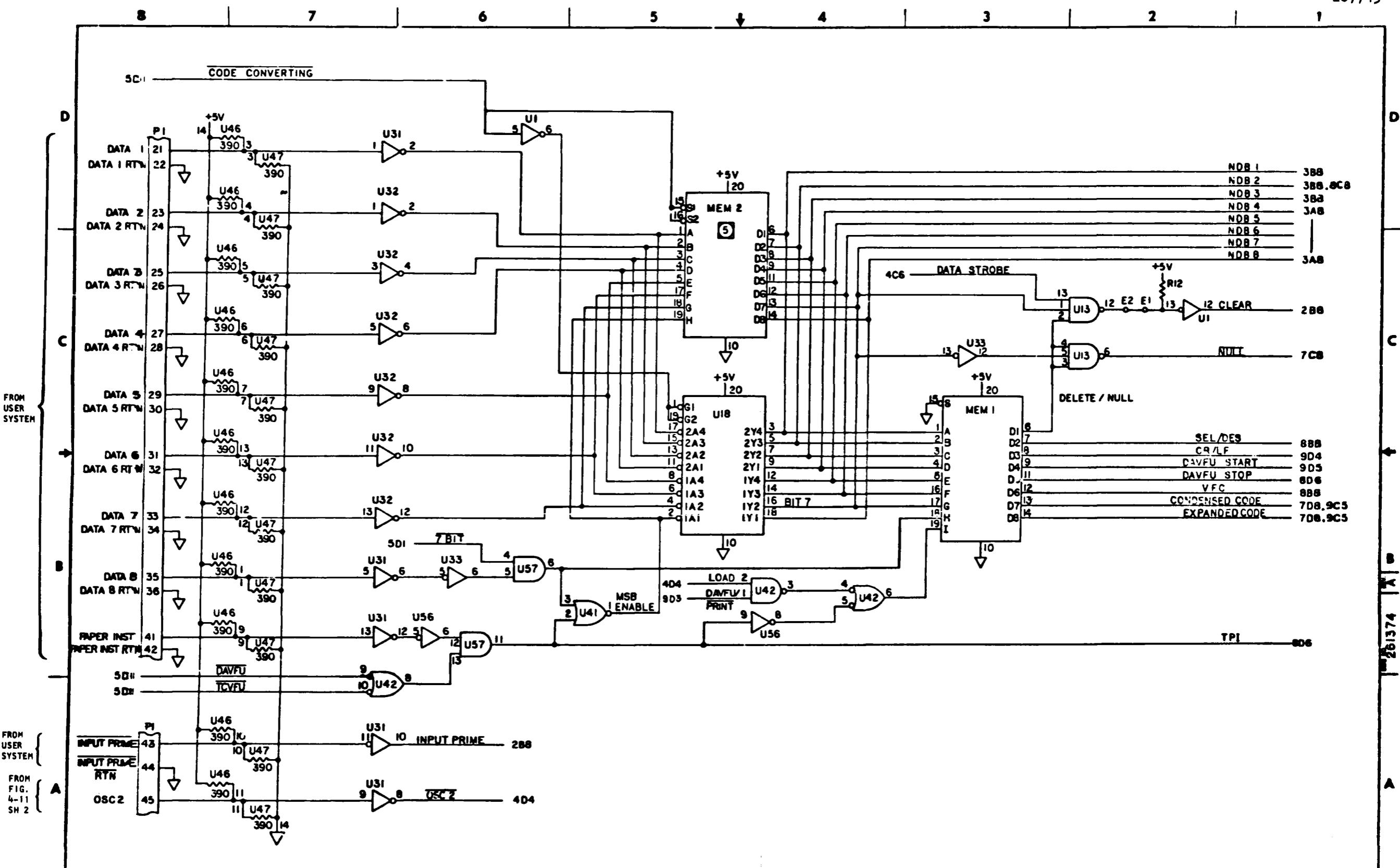


FIGURE 4-8. (SH 5 OF 9)
CIRCUIT CARD ASSEMBLY
DPC CENTRONICS-COMPATIBLE
INTERFACE



8 7 6 5 4 3 2 1

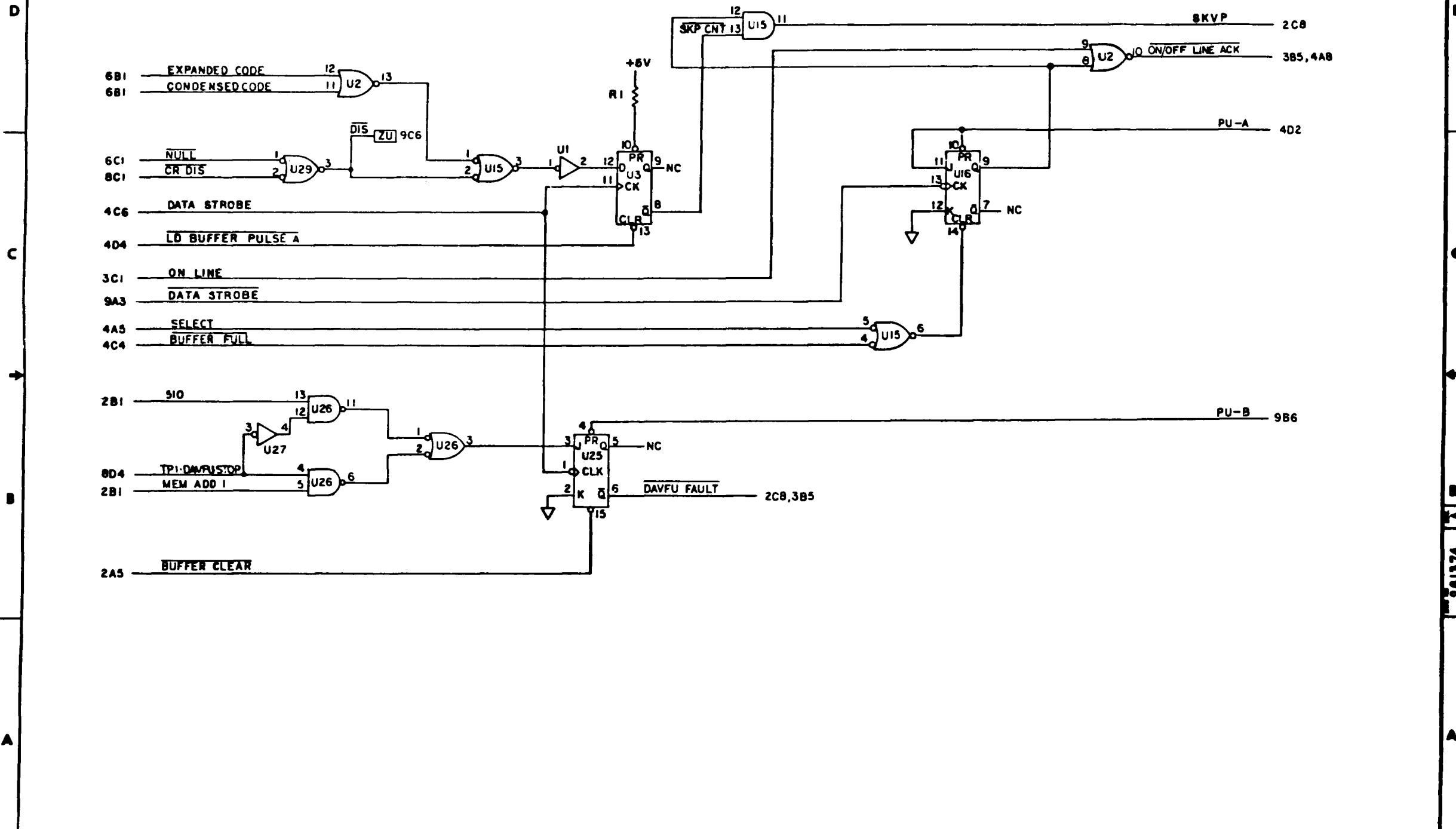


FIGURE 4-8. (SH 7 OF 9)
CIRCUIT CARD ASSEMBLY
DPC CENTRONICS-COMPATIBLE
INTERFACE

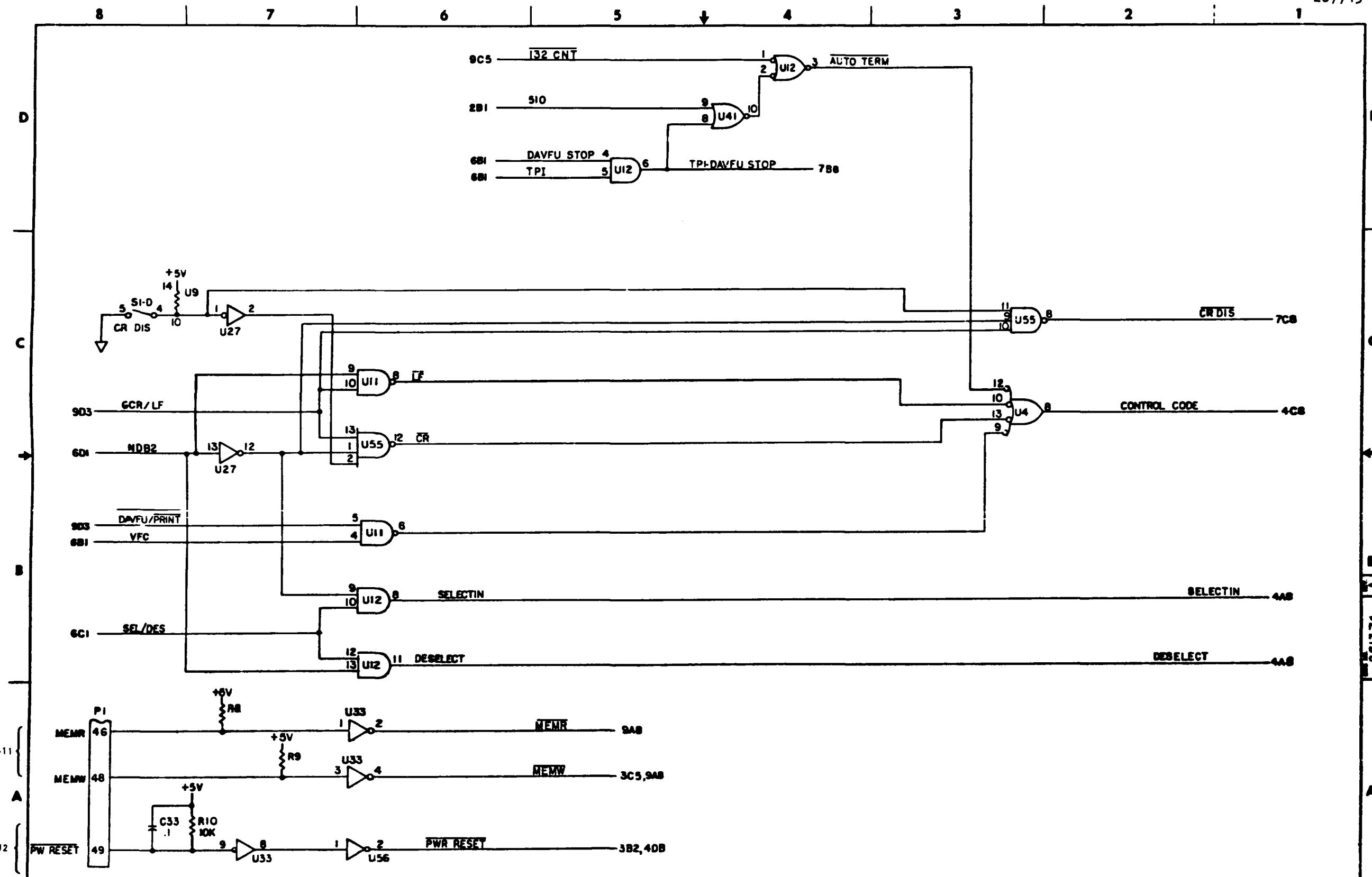


FIGURE 4-8. (SH 8 OF 9)
CIRCUIT CARD ASSEMBLY
DPC CENTRONICS-COMPATIBLE
INTERFACE

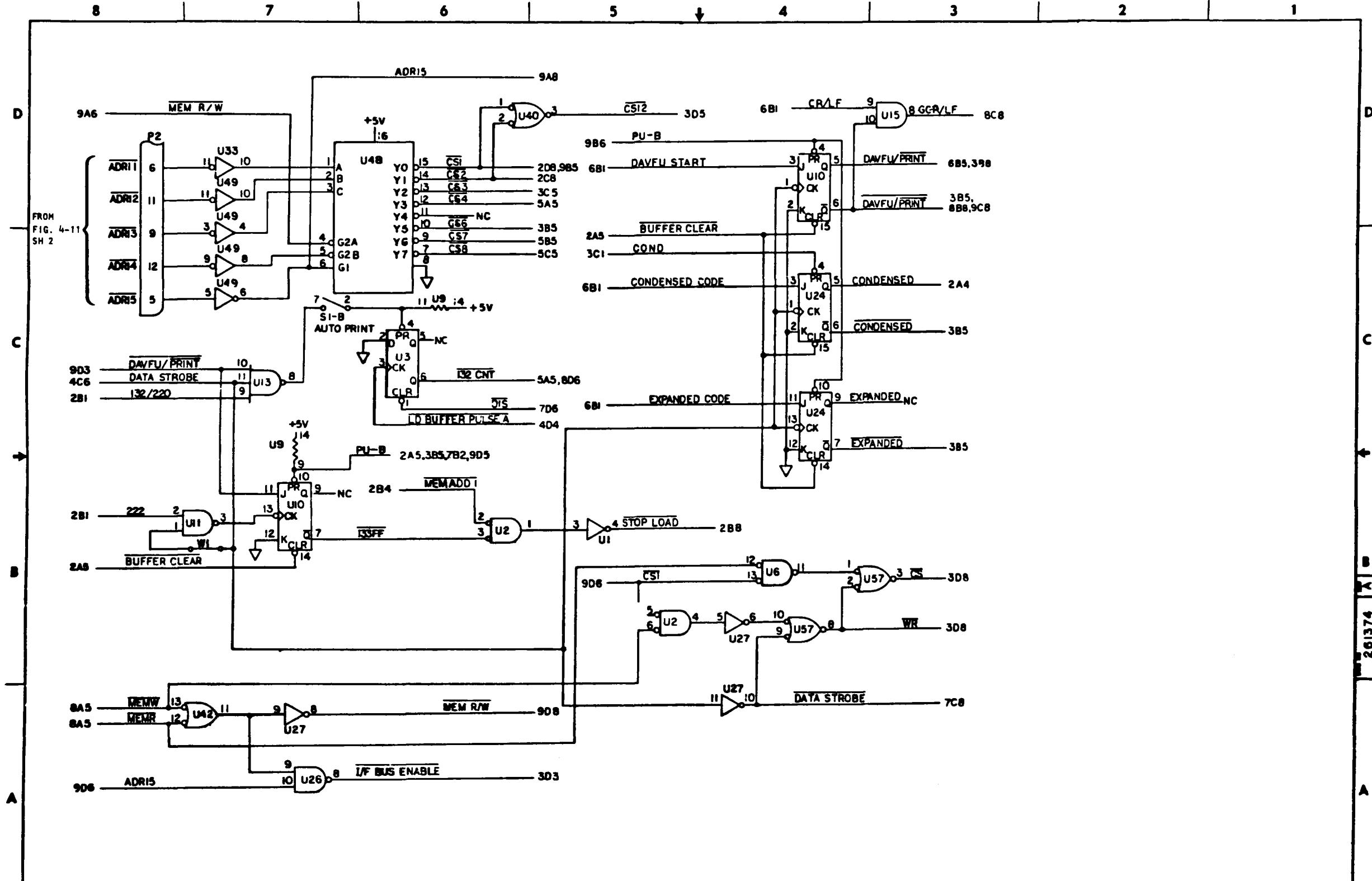
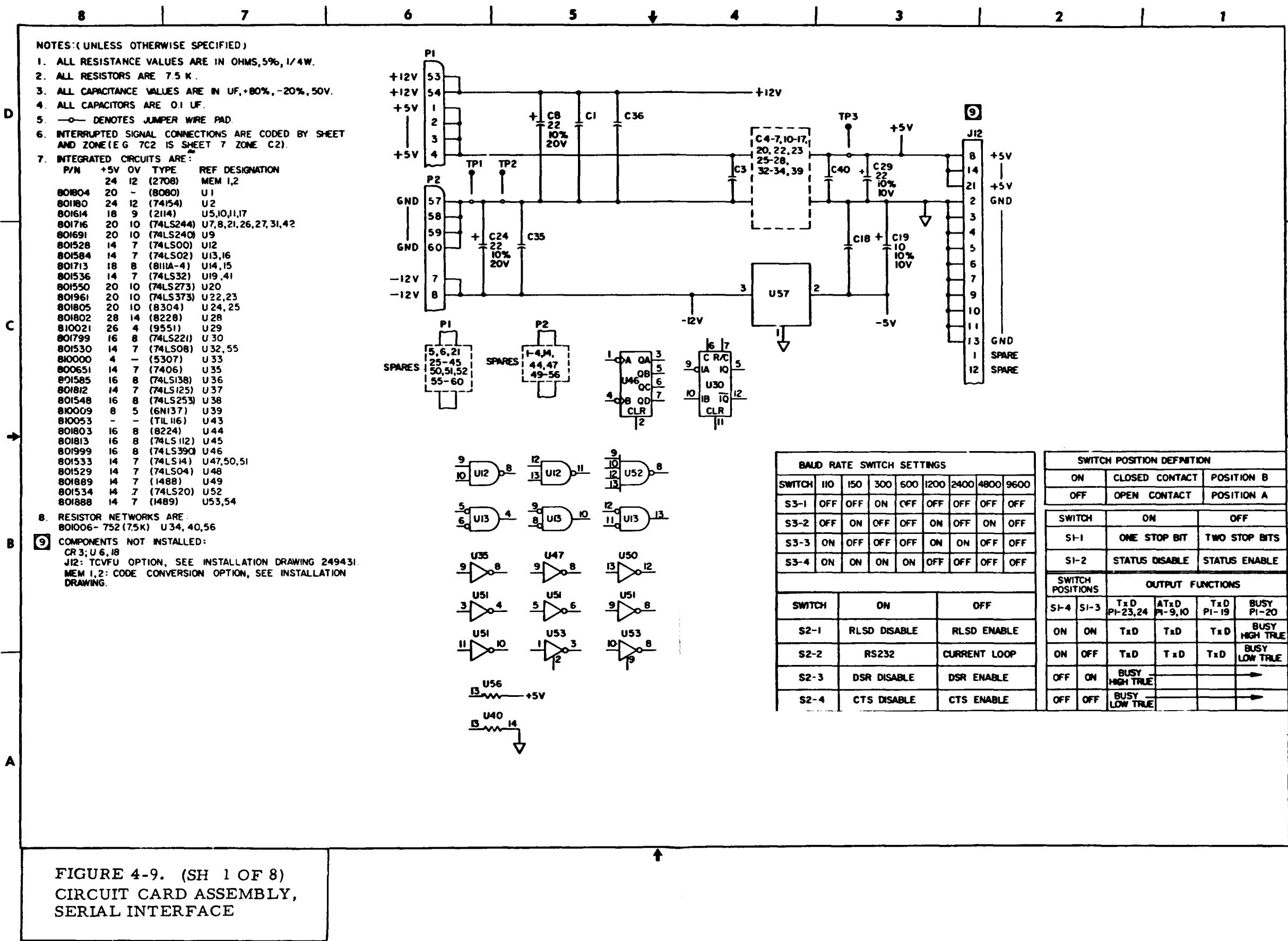


FIGURE 4-8. (SH 9 OF 9)
CIRCUIT CARD ASSEMBLY
DPC CENTRONICS-COMPATIBLE
INTERFACE



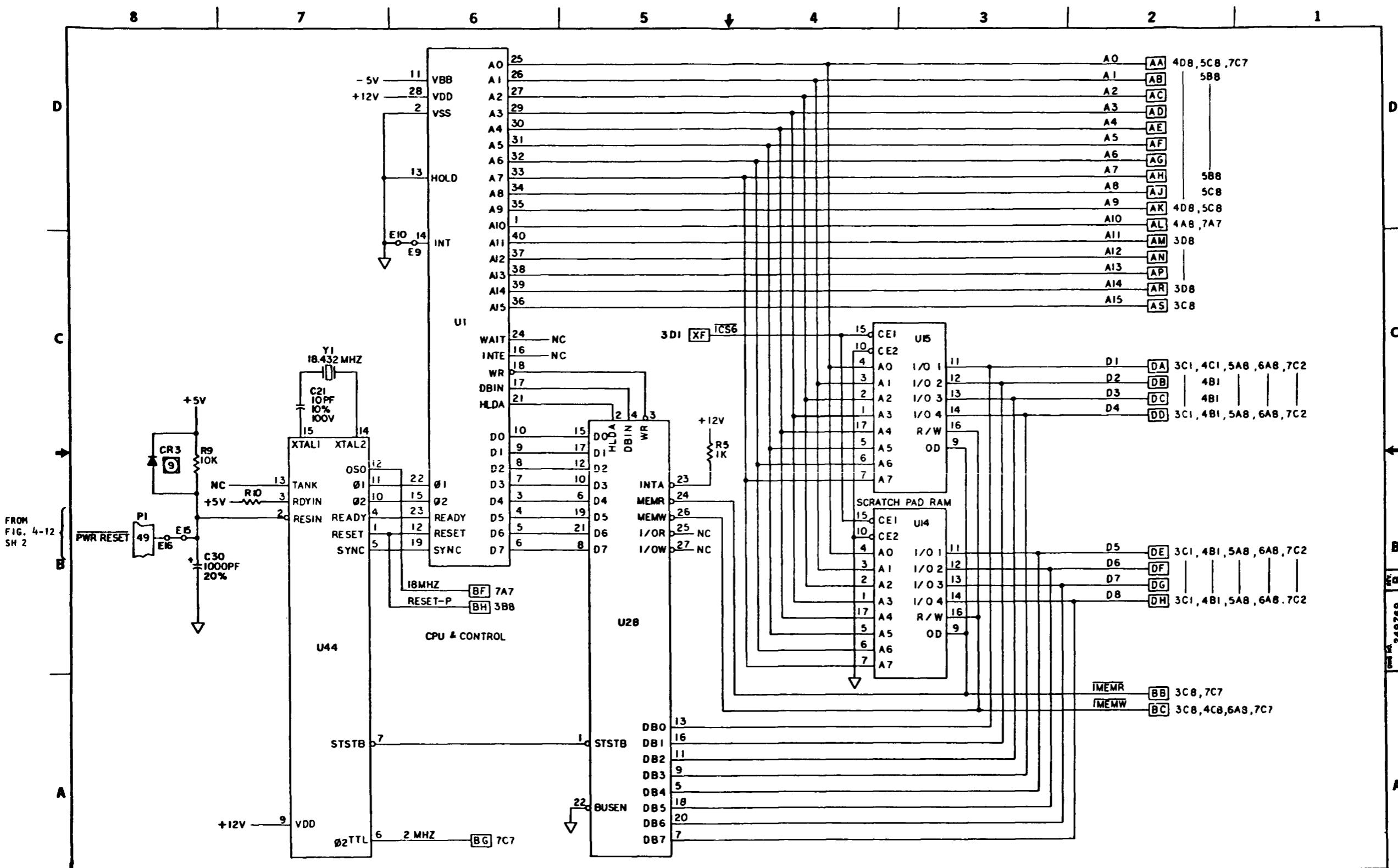
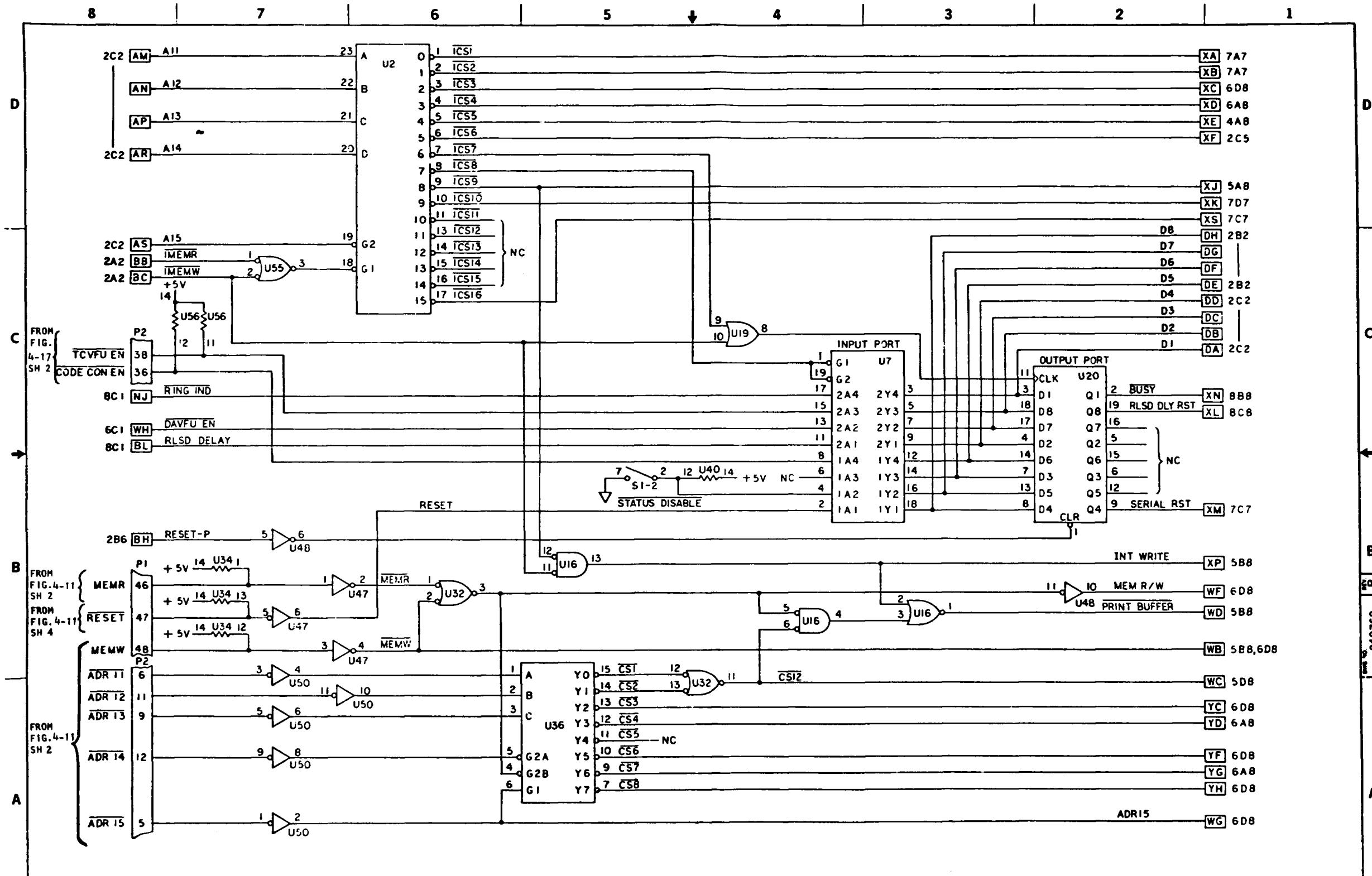


FIGURE 4-9. (SH 2 OF 8)
CIRCUIT CARD ASSEMBLY,
SERIAL INTERFACE



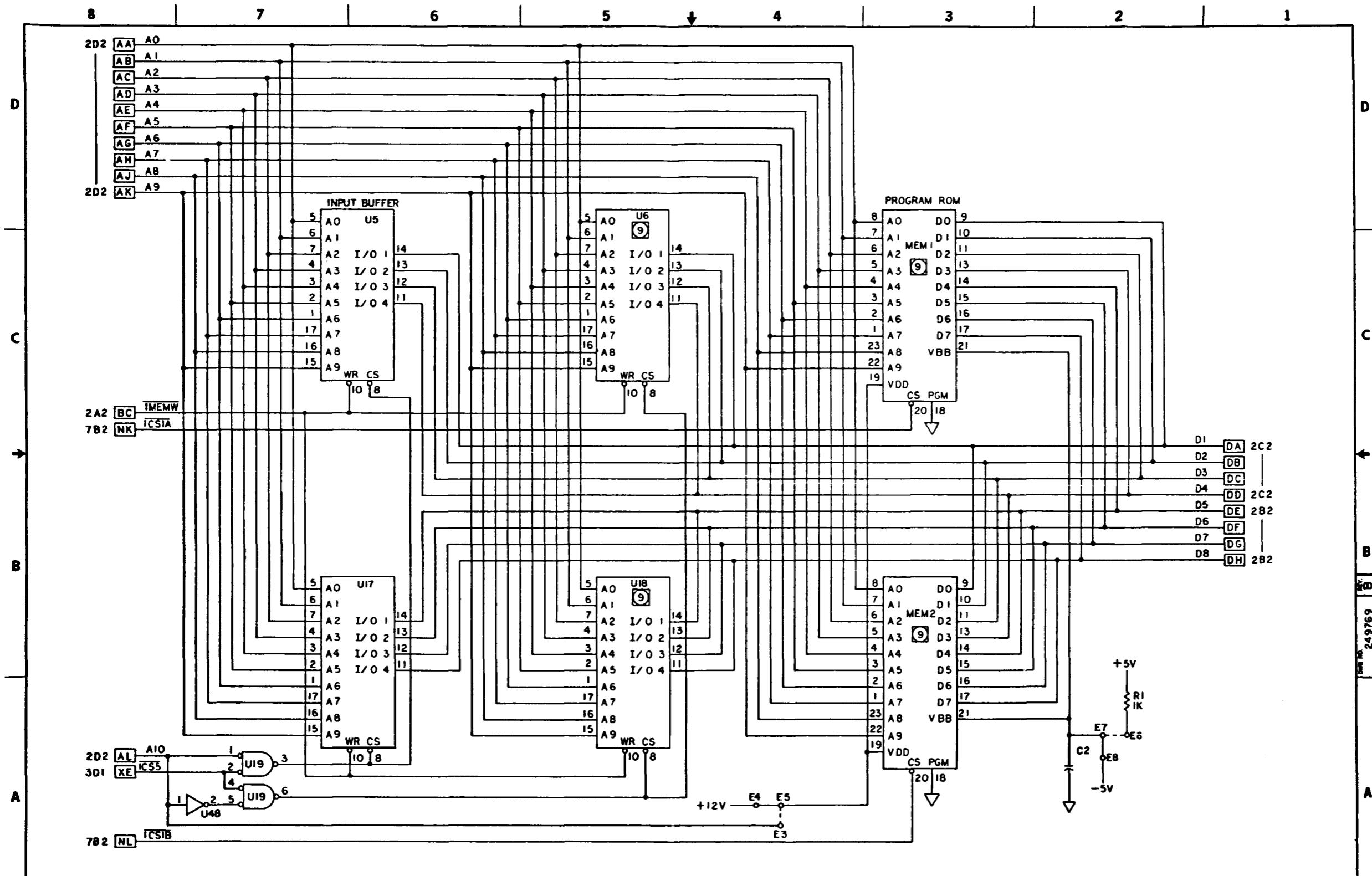


FIGURE 4-9. (SH 4 OF 8)
CIRCUIT CARD ASSEMBLY,
SERIAL INTERFACE

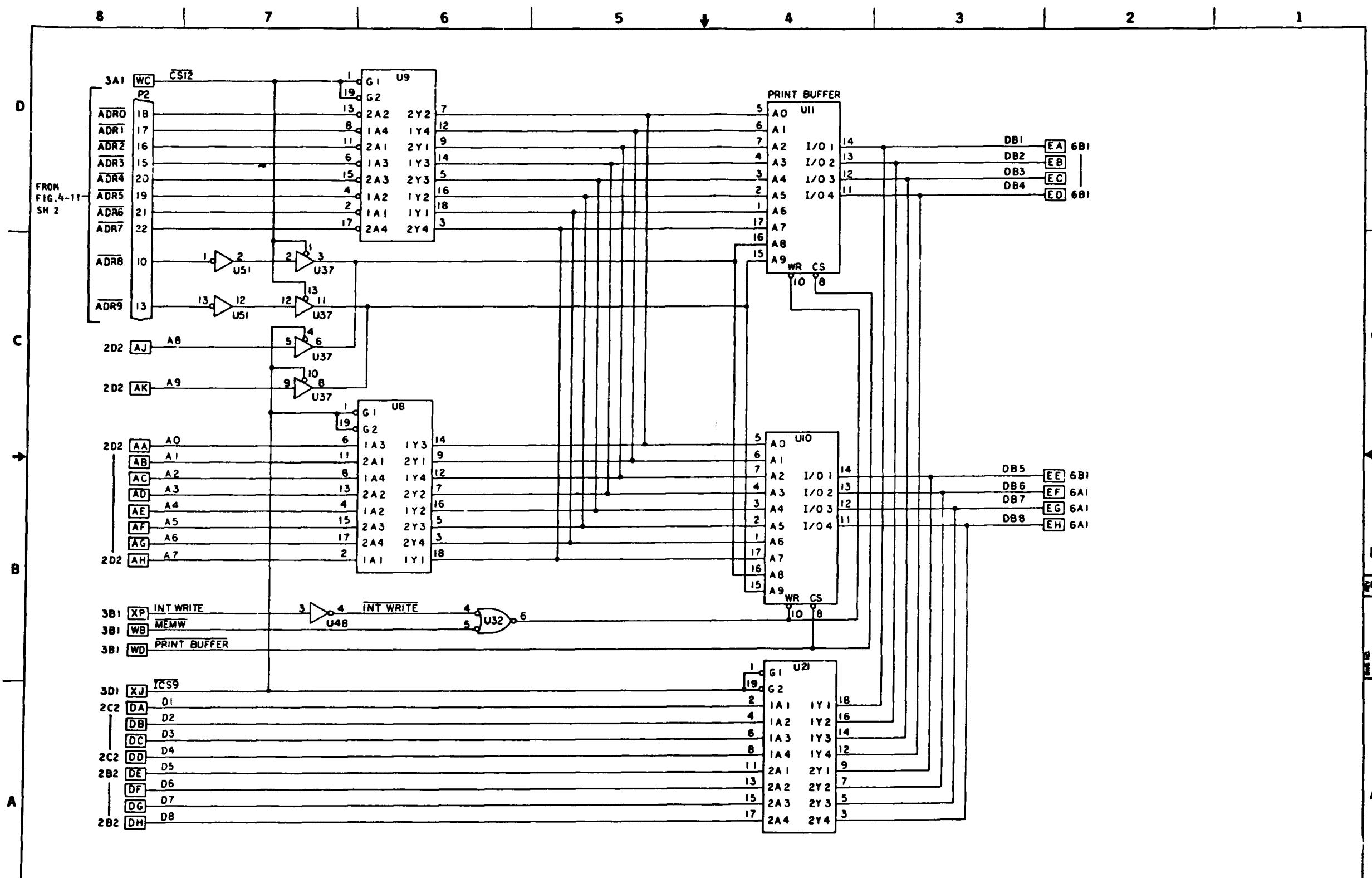


FIGURE 4-9. (SH 5 OF 8)
CIRCUIT CARD ASSEMBLY,
SERIAL INTERFACE

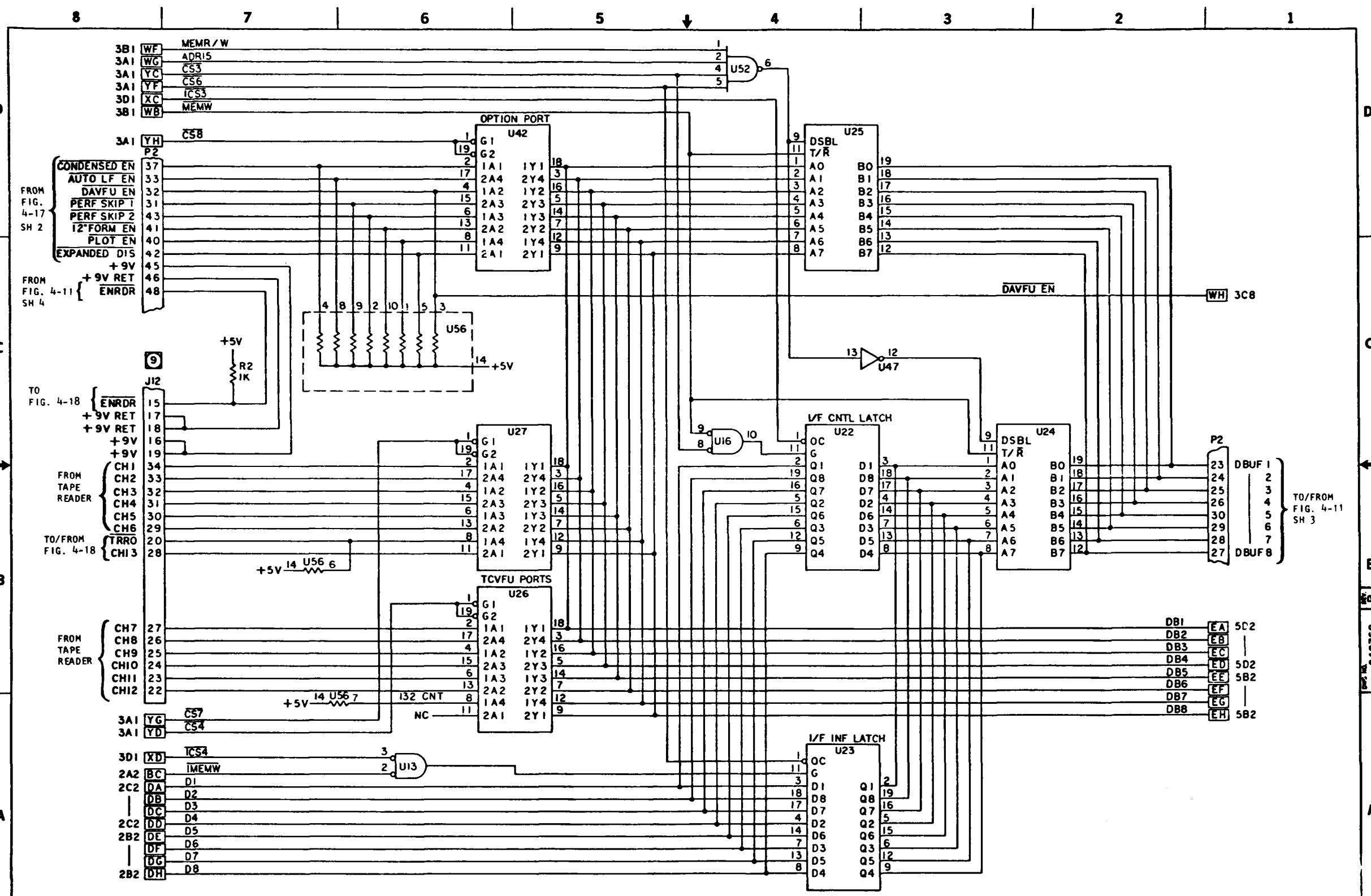
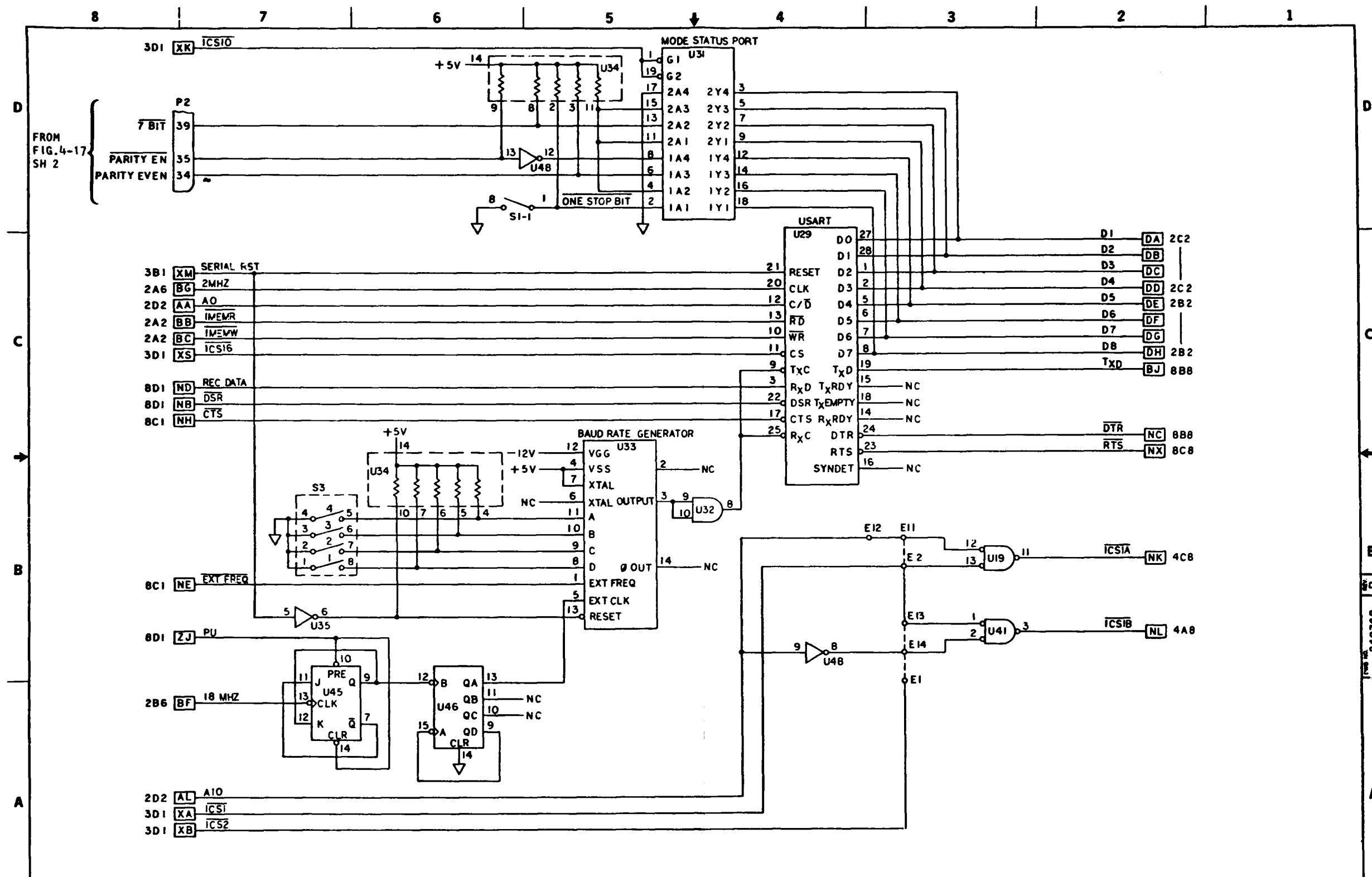


FIGURE 4-9. (SH 6 OF 8)
CIRCUIT CARD ASSEMBLY,
SERIAL INTERFACE



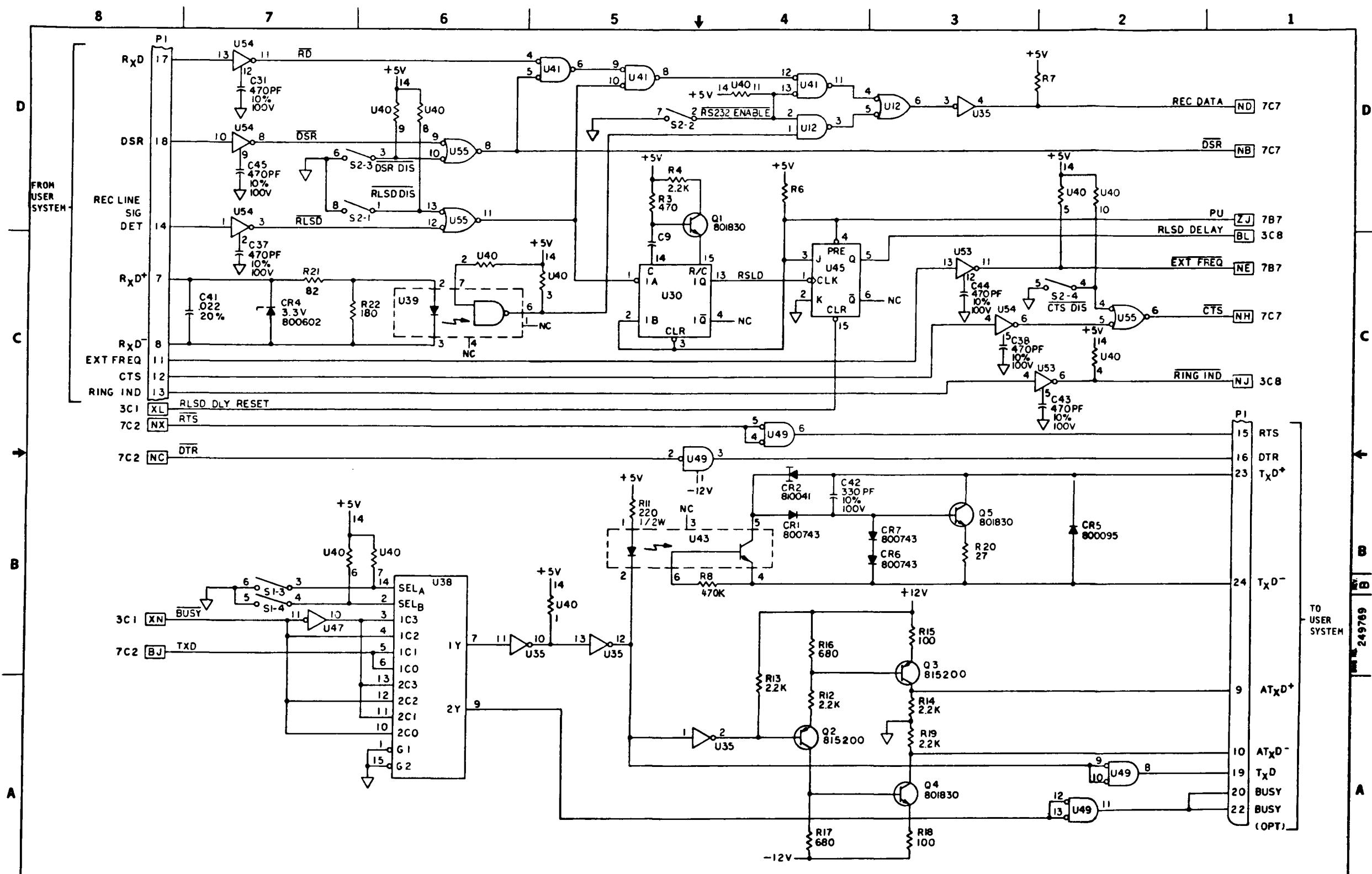


FIGURE 4-9. (SH 8 OF 8)
CIRCUIT CARD ASSEMBLY,
SERIAL INTERFACE

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. ALL RESISTANCE VALUES ARE IN OHMS, 5%, 1/4W.
2. ALL CAPACITANCE VALUES ARE IN UF, +80%, -20%, 50V.
3. —— DENOTES JUMPER WIRE PAD.
4. INTERRUPTED SIGNAL CONNECTIONS ARE CODED BY SHEET AND ZONE (E.G. 7C1 IS SHEET 7 ZONE C1).
5. INTEGRATED CIRCUITS ARE:

	+5V	0V	
810220	20	10	(74S472) MEM2
801913	16	8	(74S287) MEM3
801534	14	7	(74LS20) U1
801540	14	7	(74LS74) U2,6,10,26
801536	14	7	(74LS32) U3,12,18
801530	14	7	(74LS08) U4,13,32
801813	16	8	(74LS112) U5,7,9,15,27,35
801528	14	7	(74LS00) U8,11,21,53
801529	14	7	(74LS04) U14,17,52
801584	14	7	(74LS02) U16
801541	5	12	(74LS75) U19
801759	14	7	(74LS86) U20,25
801585	16	8	(74LS138) U22
801812	14	7	(74LS125) U23
801532	14	7	(74LS11) U24
801533	14	7	(74LS14) U29
800959	14	7	(7414) U30,31,36
801550	20	10	(74LS273) U33
801716	20	10	(74LS244) U34,41,45,48,50,51,55
801614	18	9	(2114) U39,47
801691	20	10	(74LS240) U40,42,56
801961	20	10	(74LS373) U43
801814	14	7	(74LS280) U44
801811	16	8	(74LS366) U46
801805	20	10	(8304) U49,57
801694	14	7	(74LS393) U54

6. RESISTOR NETWORKS ARE:

801006-391(390): U28,37

801006-752(7.5K): U38,58

7. COMPONENTS NOT INSTALLED:

C37; R8

J12: TCVFU OPTION, SEE INSTALLATION DWG. 24943I.

MEM1: CODE CONVERSION OPTION, SEE INSTALLATION DWG.

SPARES

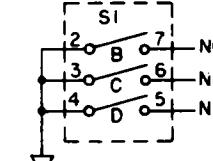
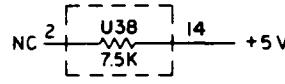
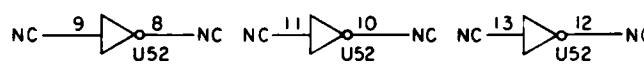
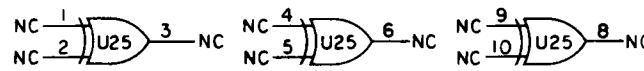
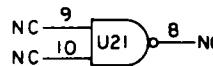
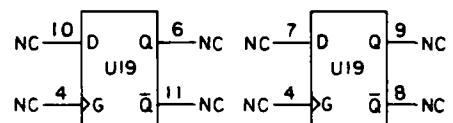
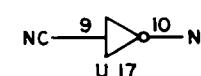
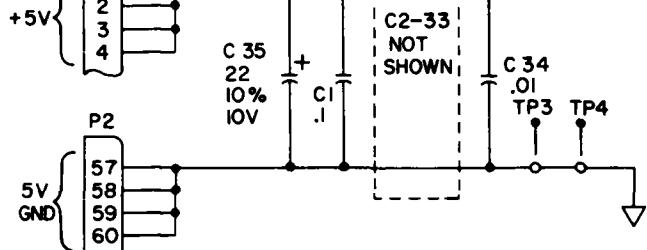
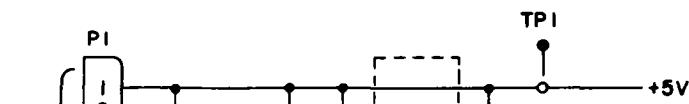
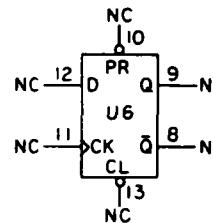


FIGURE 4-10. (SH 1 OF 9)
CIRCUIT CARD ASSEMBLY
SHORT-LINE PARALLEL
INTERFACE

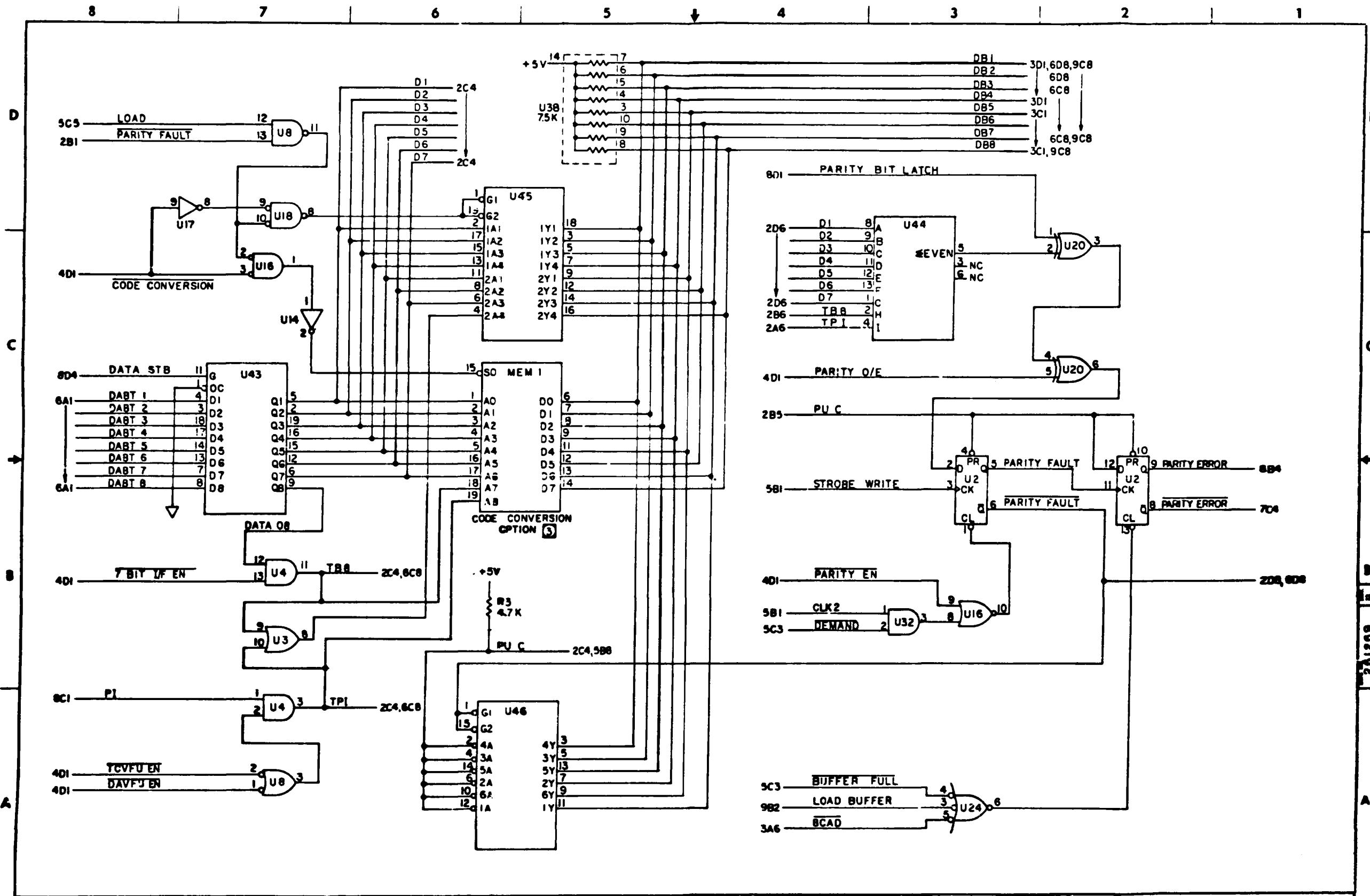


FIGURE 4-10. (SH 2 OF 9)
CIRCUIT CARD ASSEMBLY
SHORT-LINE PARALLEL
INTERFACE

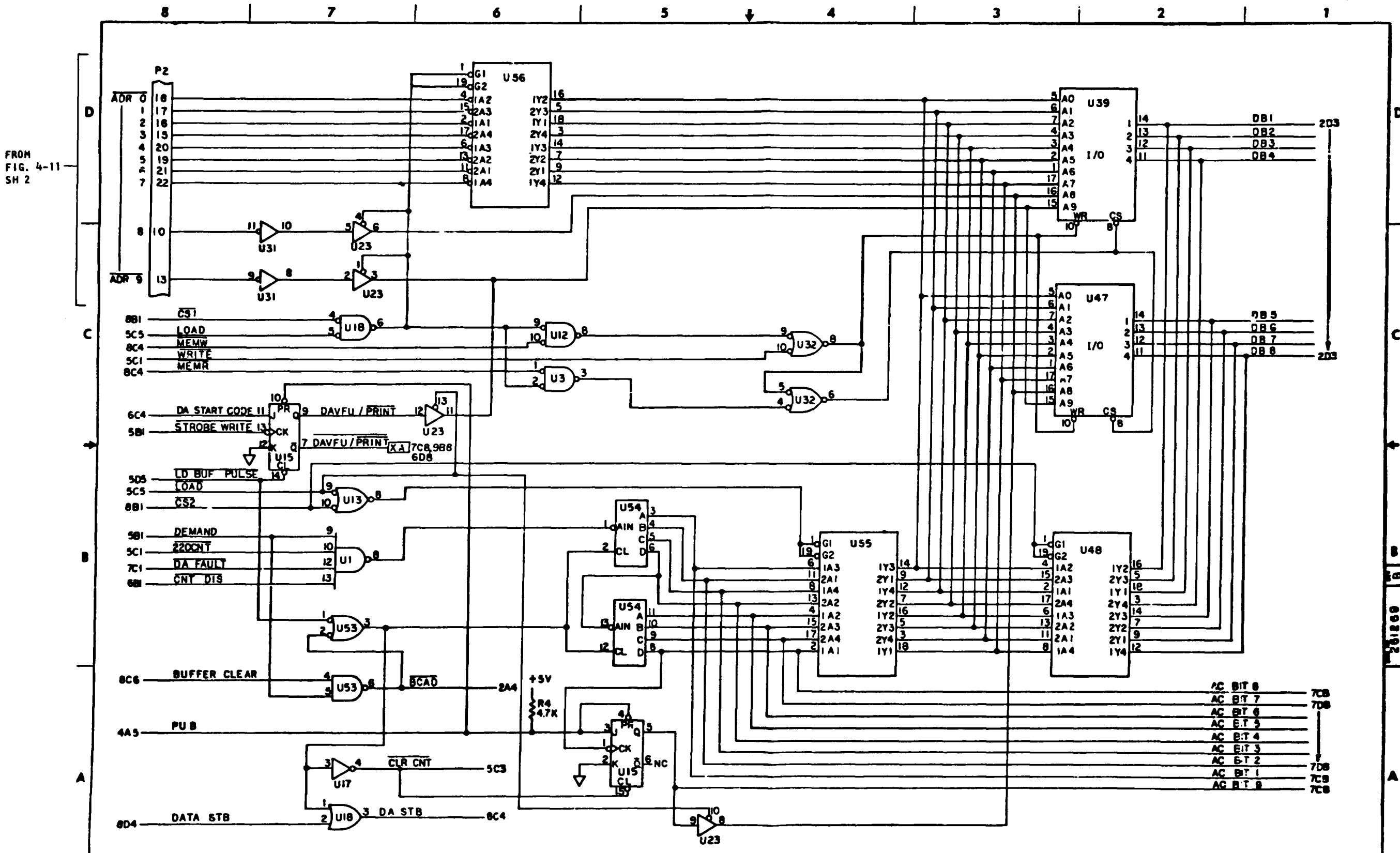


FIGURE 4-10. (SH 3 OF 9)
CIRCUIT CARD ASSEMBLY
SHORT-LINE PARALLEL
INTERFACE

8 | 7 | 6 | 5 | ↓ | 4 | 3 | 2 | 1

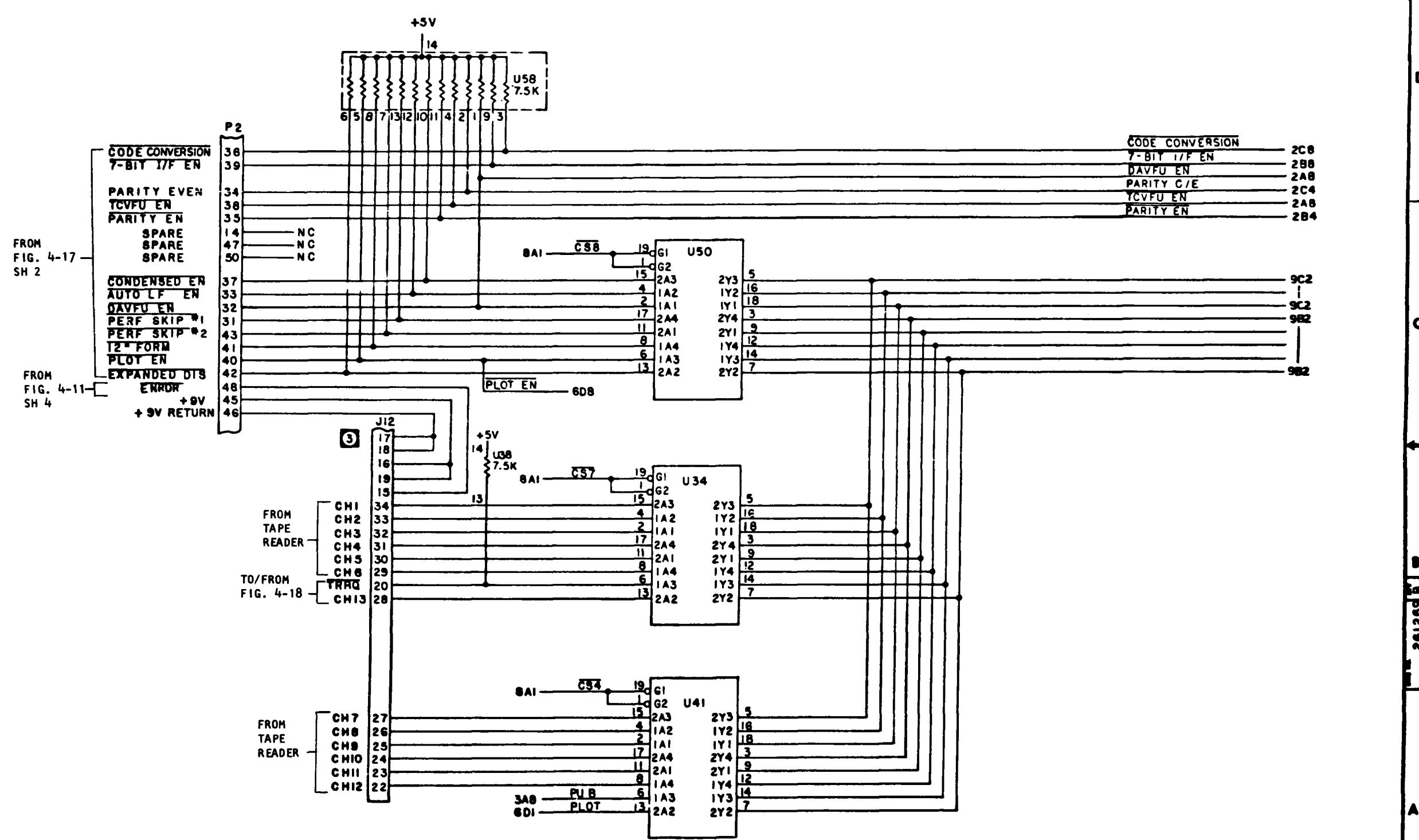


FIGURE 4-10. (SH 4 OF 9)
CIRCUIT CARD ASSEMBLY
SHORT-LINE PARALLEL
INTERFACE

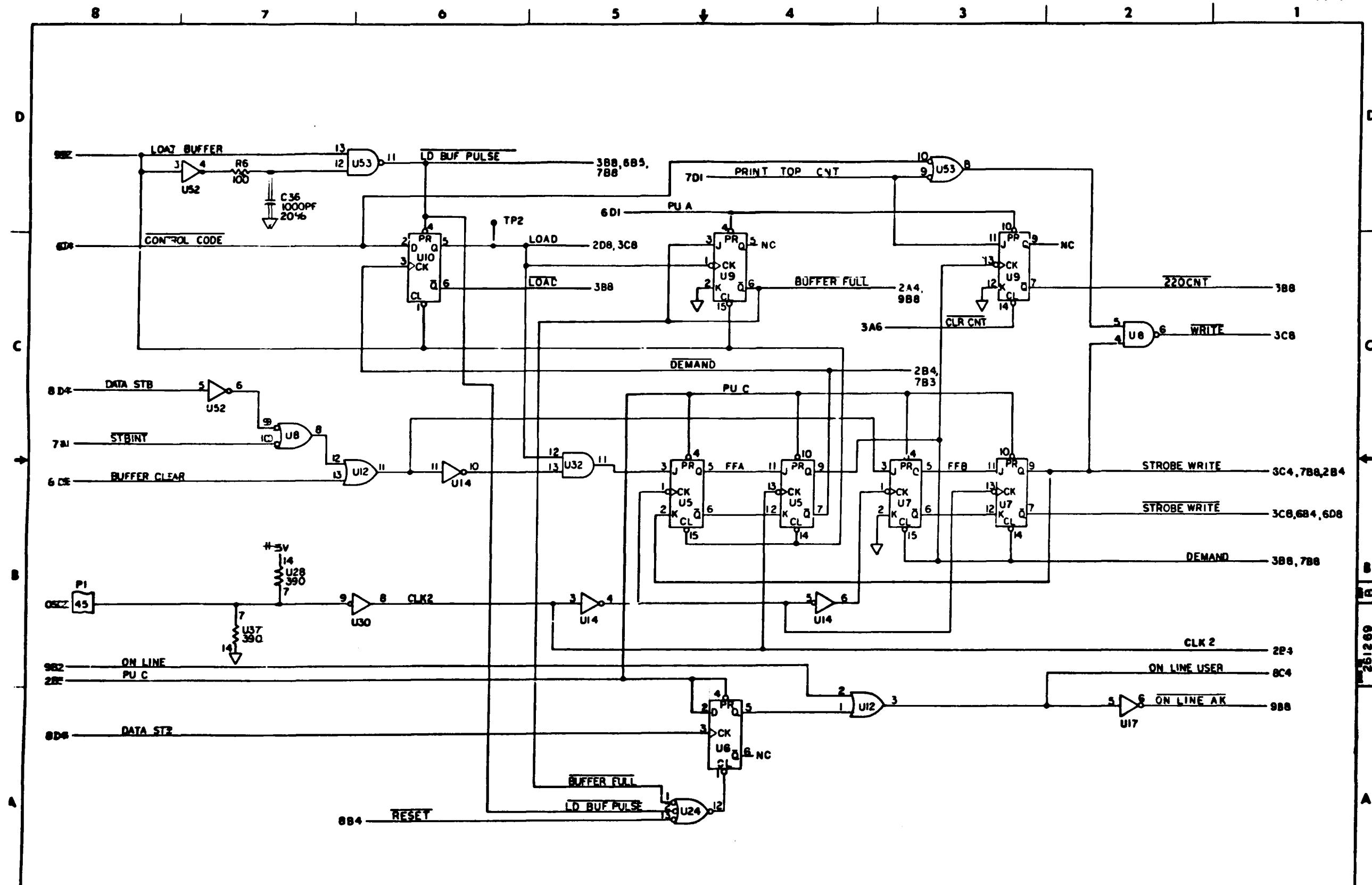


FIGURE 4-10. (SH 5 OF 9)
CIRCUIT CARD ASSEMBLY
SHORT-LINE PARALLEL
INTERFACE

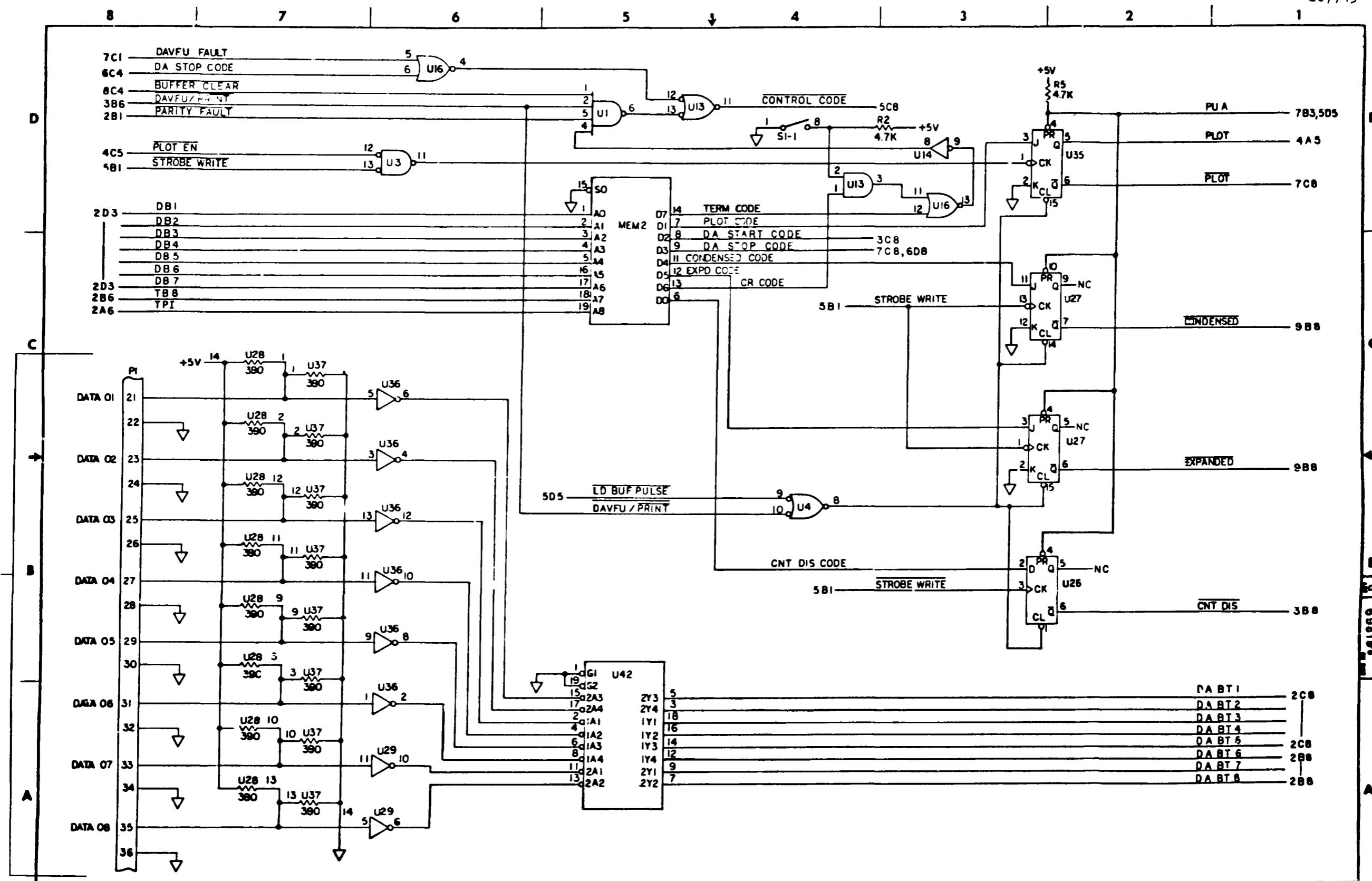


FIGURE 4-10.(SH 6 OF 9)
CIRCUIT CARD ASSEMBLY
SHORT-LINE PARALLEL
INTERFACE

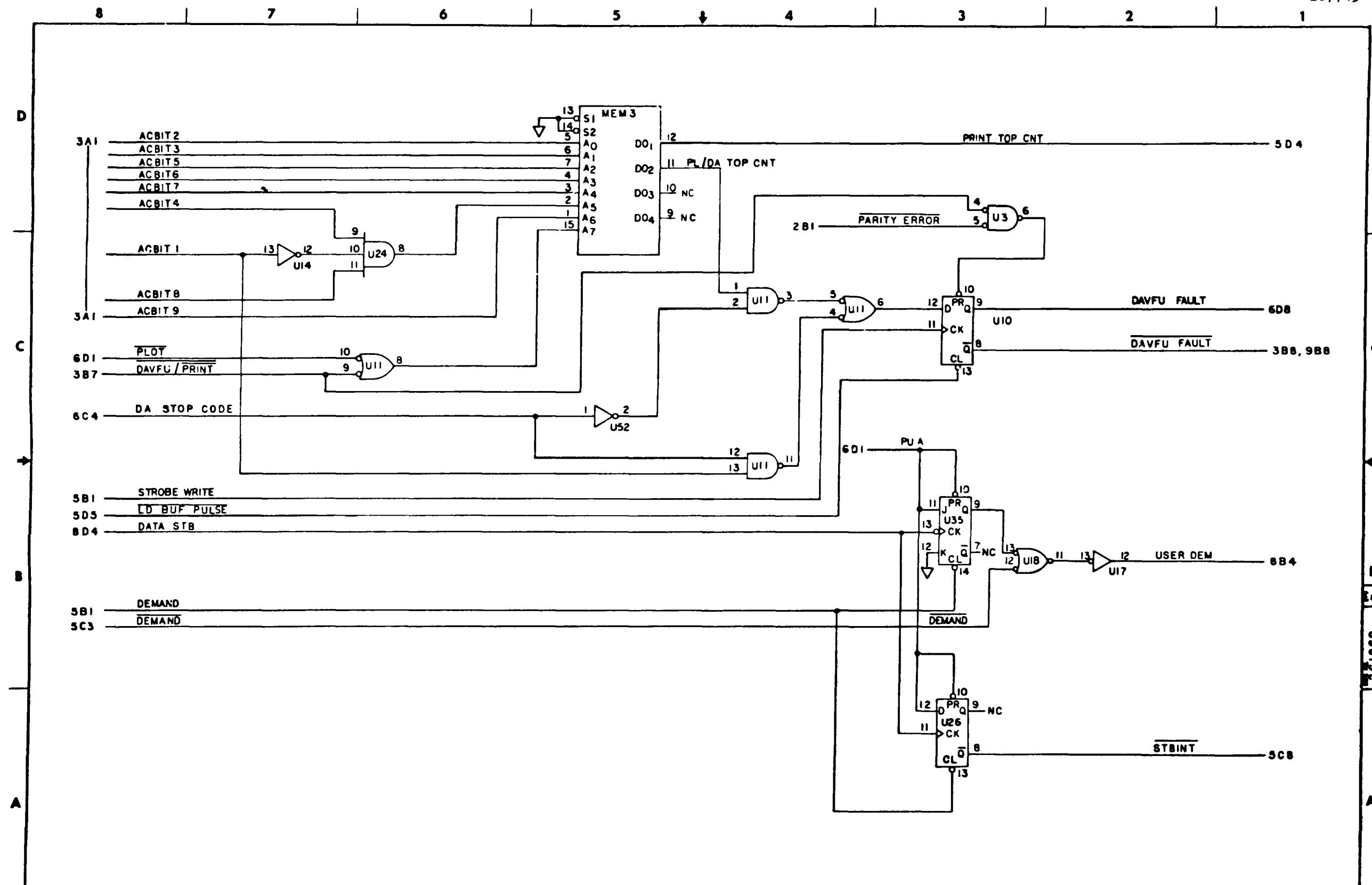


FIGURE 4-10. (SH 7 OF 9)
CIRCUIT CARD ASSEMBLY
SHORT-LINE PARALLEL
INTERFACE

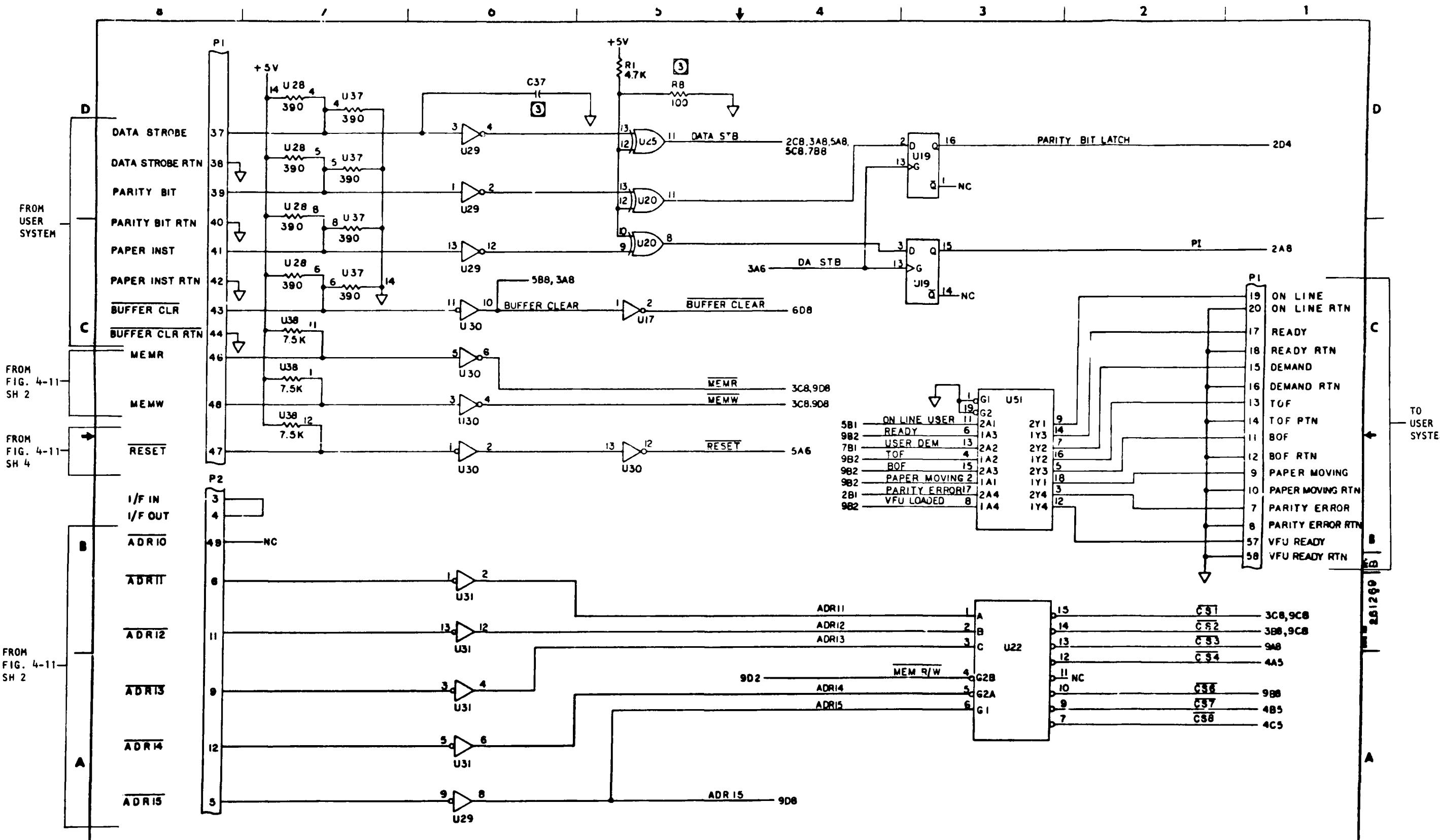


FIGURE 4-10. (SH 8 OF 9)
CIRCUIT CARD ASSEMBLY
SHORT-LINE PARALLEL
INTERFACE

8 | 7 | 6 | 5 | ↓ | 4 | 3 | 2 | 1

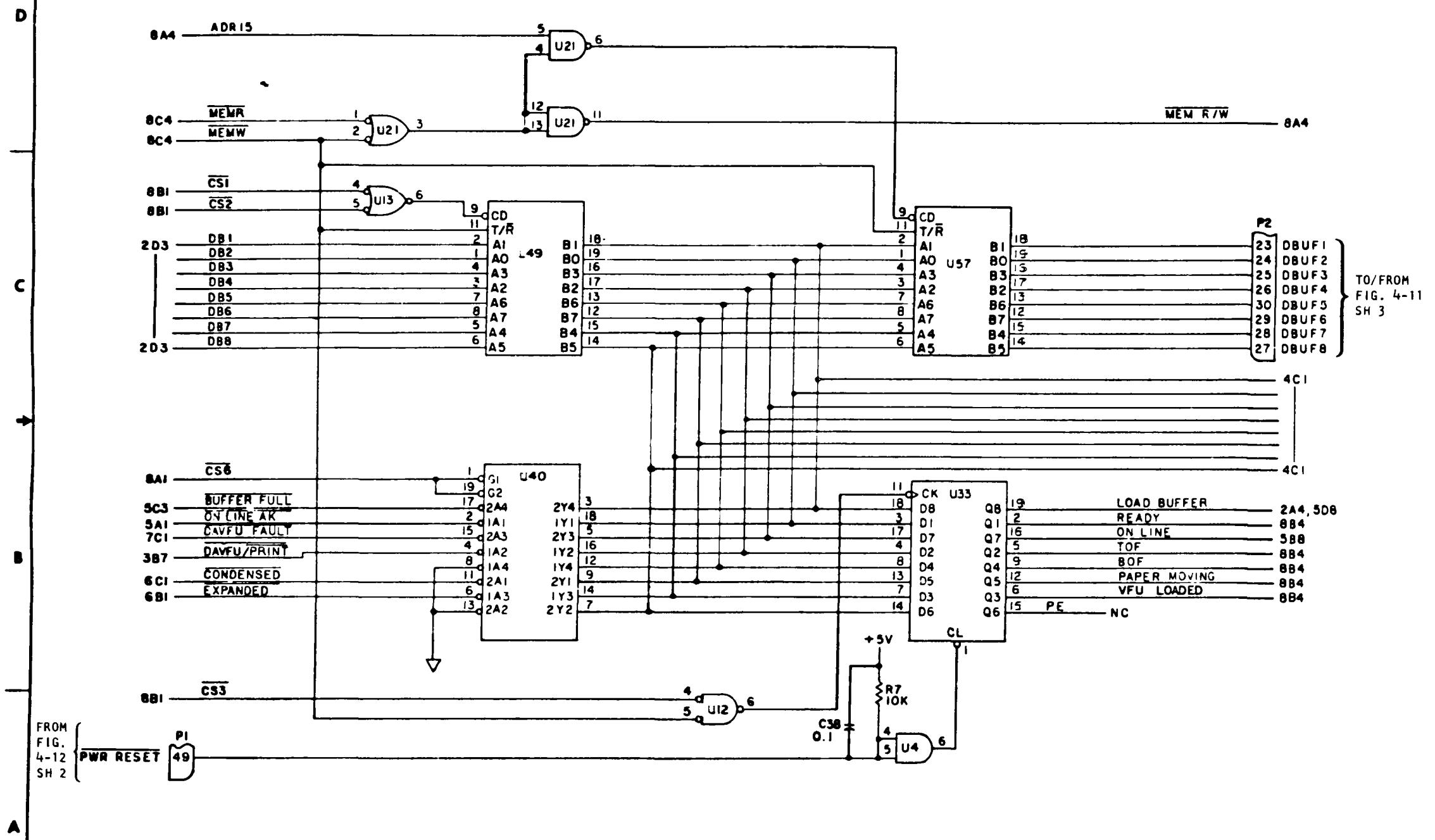


FIGURE 4-10. (SH 9 OF 9)
CIRCUIT CARD ASSEMBLY
SHORT-LINE PARALLEL
INTERFACE

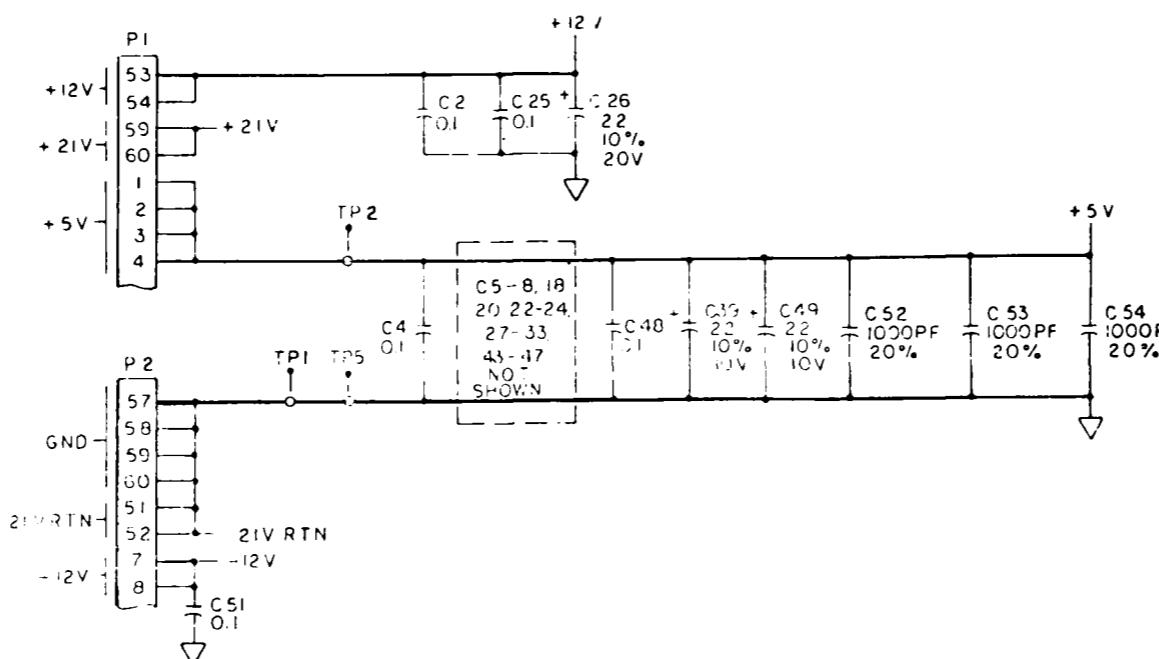
8 7 6 5 4 3 2 1

NOTES: (UNLESS OTHERWISE SPECIFIED)

1 ALL RESISTANCE VALUES ARE IN OHMS, 5%, 1/4W.

2 ALL CAPACITANCE VALUES ARE IN MICROFARADS,
+80% - 20%, 50V.D [3] OPTIONAL COMPONENTS NOT INSTALLED ON 261155 ASSY:
CR2, R2, R13, C13, 50, MEM1-5.D [2] SEE MEMORY CONFIGURATION TABLE FOR
RESISTOR SELECTION.

5 GROUND AND POWER FOR SPARE IC LOCATIONS ARE:

GND +5V
7 14
8 16

GP 3,4		801006	-	14
MEM2-5			12	24
MEM1			14	28
U1, 3741-42	74LS02	801584	7	14
U5	75463	801798	4	8
U34	4..513?	801800	7	14
U27, 28	8304	801805	10	20
U23-25, 29, 30	74LS273	801550	10	20
U22	74LS374	801723	10	20
U21, 26, 31	74LS244	801716	10	20
U19	8228	801802	14	28
U16, 20	74LS08	801530	7	14
U4, 15	RAM1024	PC1614	9	18
U11, 12	7474	60C400	7	14
U10	74LS14	801533	7	14
U3	74LS00	801528	7	14
U8	74LS138	801585	8	16
U6	74221	801C23	8	16
U4	74154	801180	12	24
U3, 33, 38, 39, 46	74LS04	801529	7	14
U2	8080	801804	2	20
U1	8224	801803	8	16
REF DES	DEVICE TYPE	UP140	0V	+5V
DEVICE CHART				

MEMORY CONFIGURATION TABLE (4)	
MEMORY TYPE	RESISTORS INSTALLED
2315 / 2716	R3, 4, 5, 33
2332 / 2732	R33, 42, 43, 44
2364 / 2764	R42, 43, 44, 46

261156
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
V
W
X
Y
Z
FIGURE 4-11 (SH 1 OF 5)
CIRCUIT CARD ASSEMBLY,
PROCESSOR

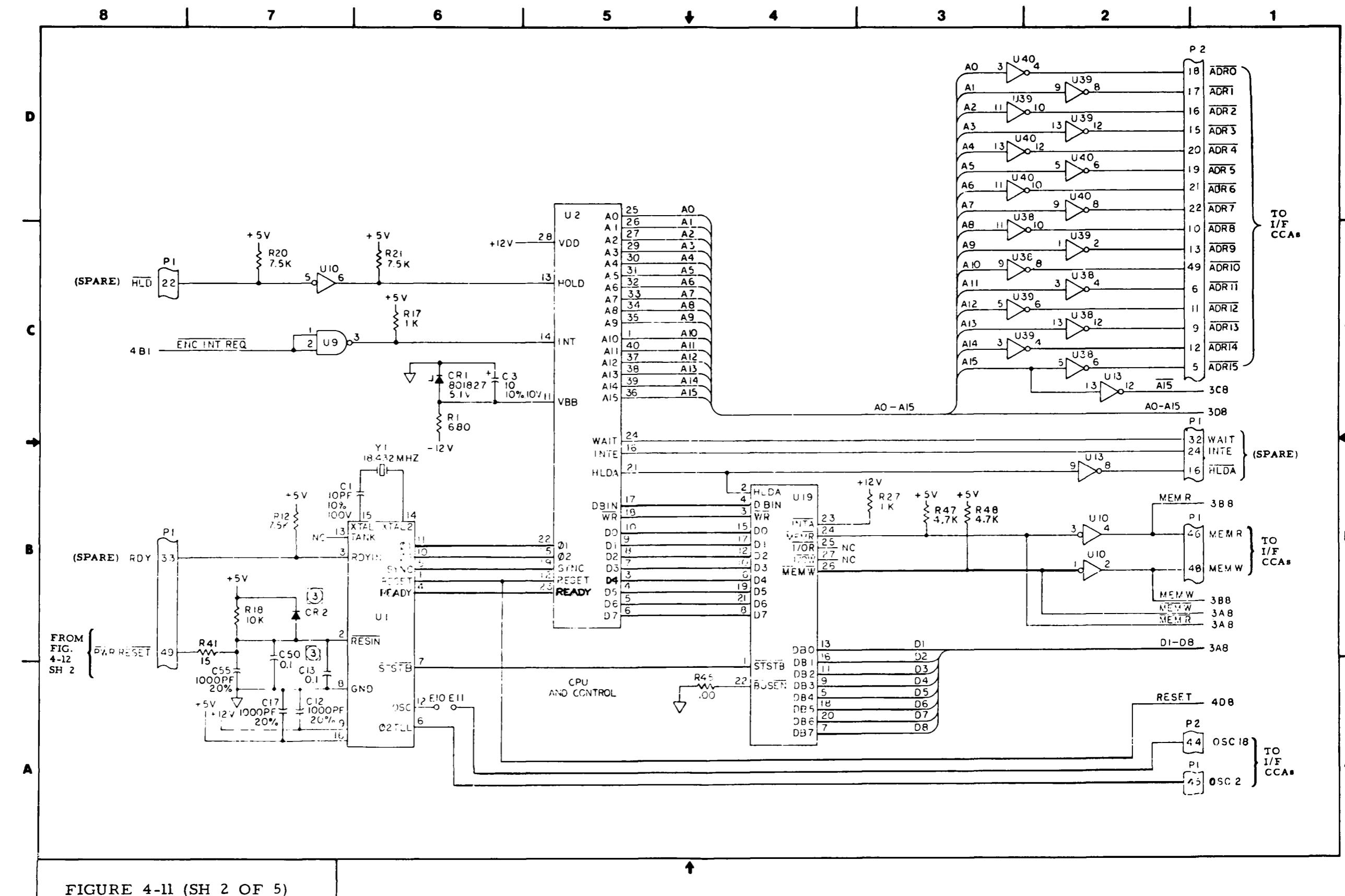


FIGURE 4-11 (SH 2 OF 5)
CIRCUIT CARD ASSEMBLY,
PROCESSOR

8 7 6 5 4 3 2 1

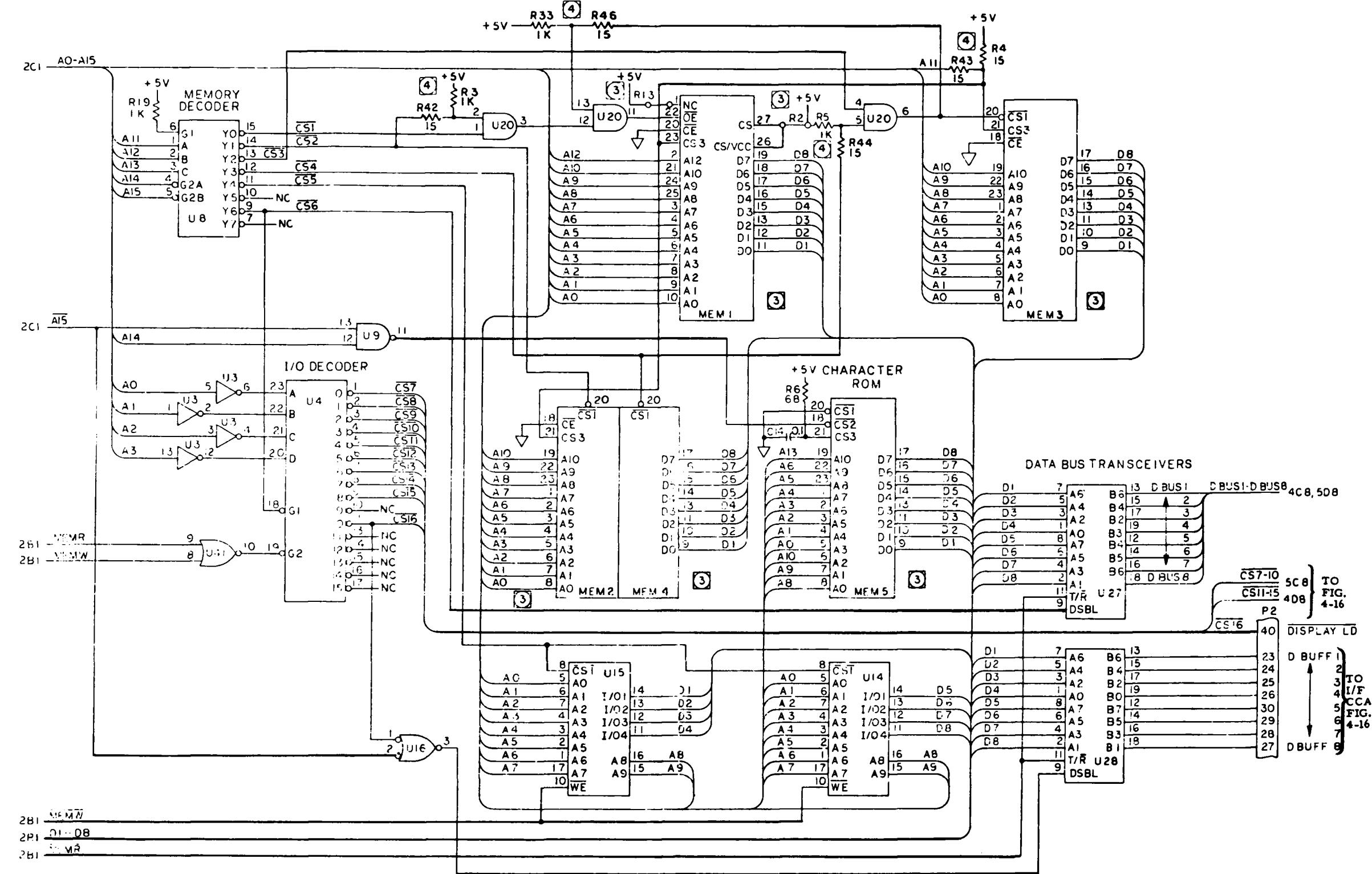
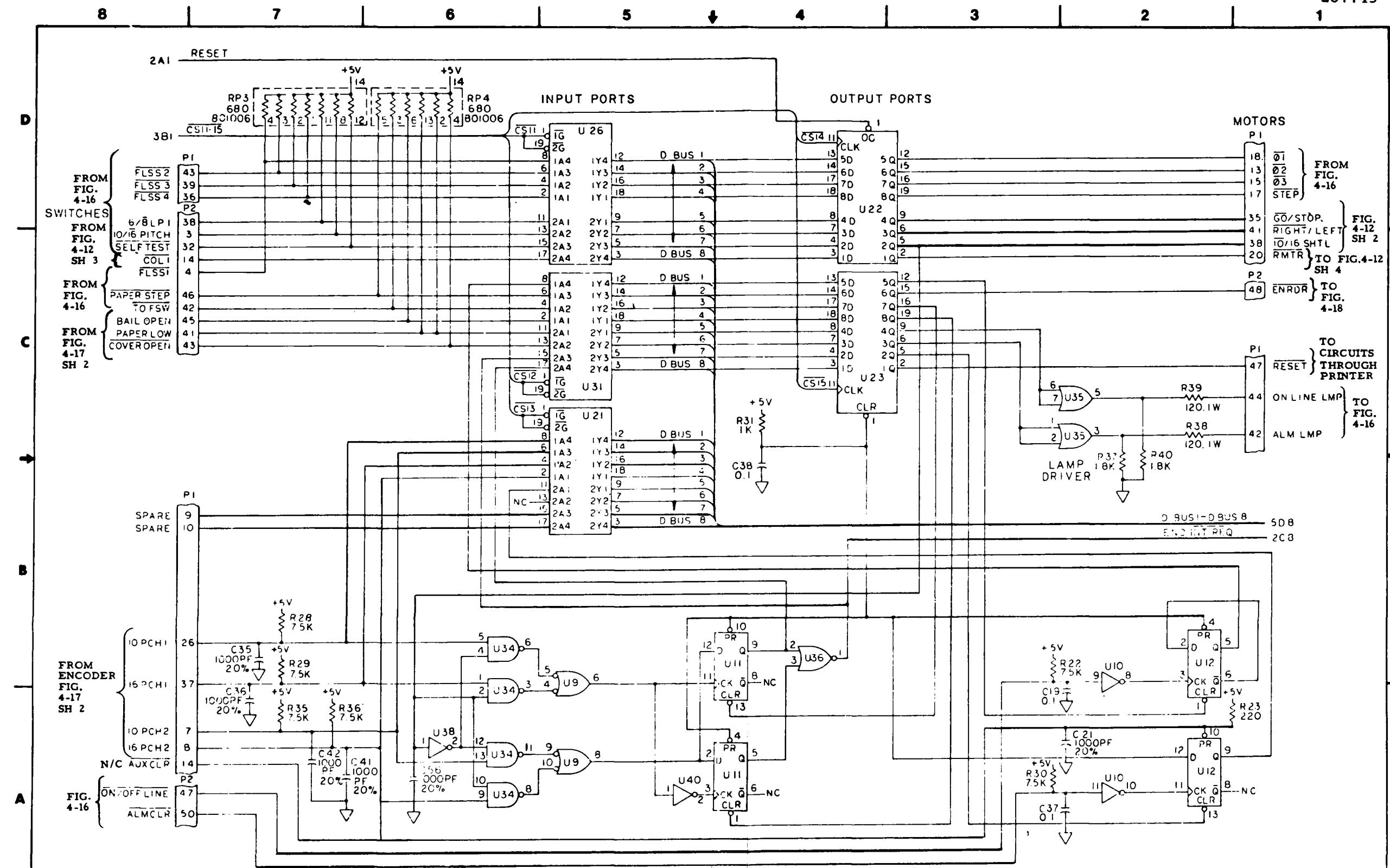


FIGURE 4-11 (SH 3 OF 5)
CIRCUIT CARD ASSEMBLY,
PROCESSOR



8 7 6 5 4 3 2 1

D

D

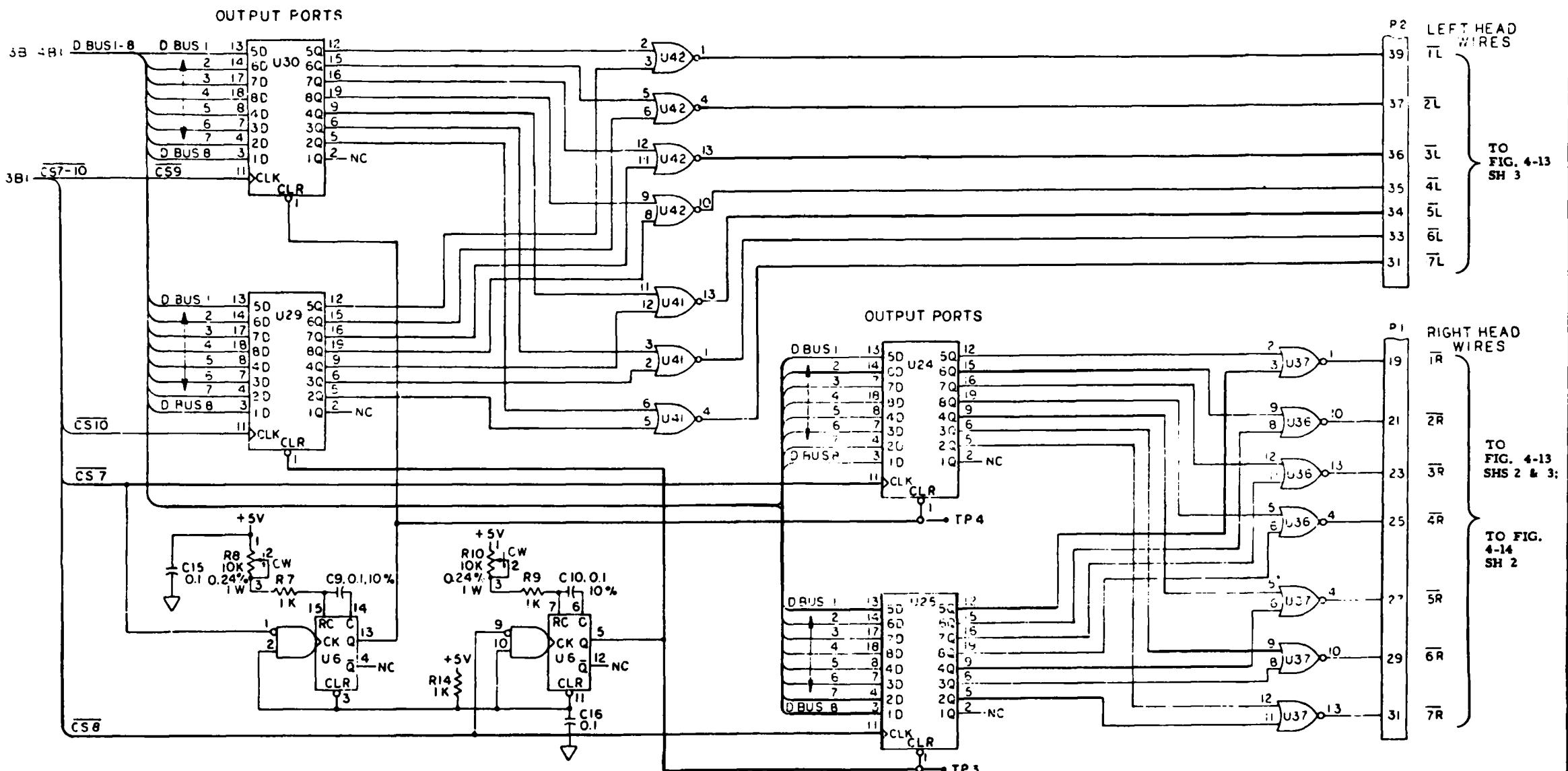


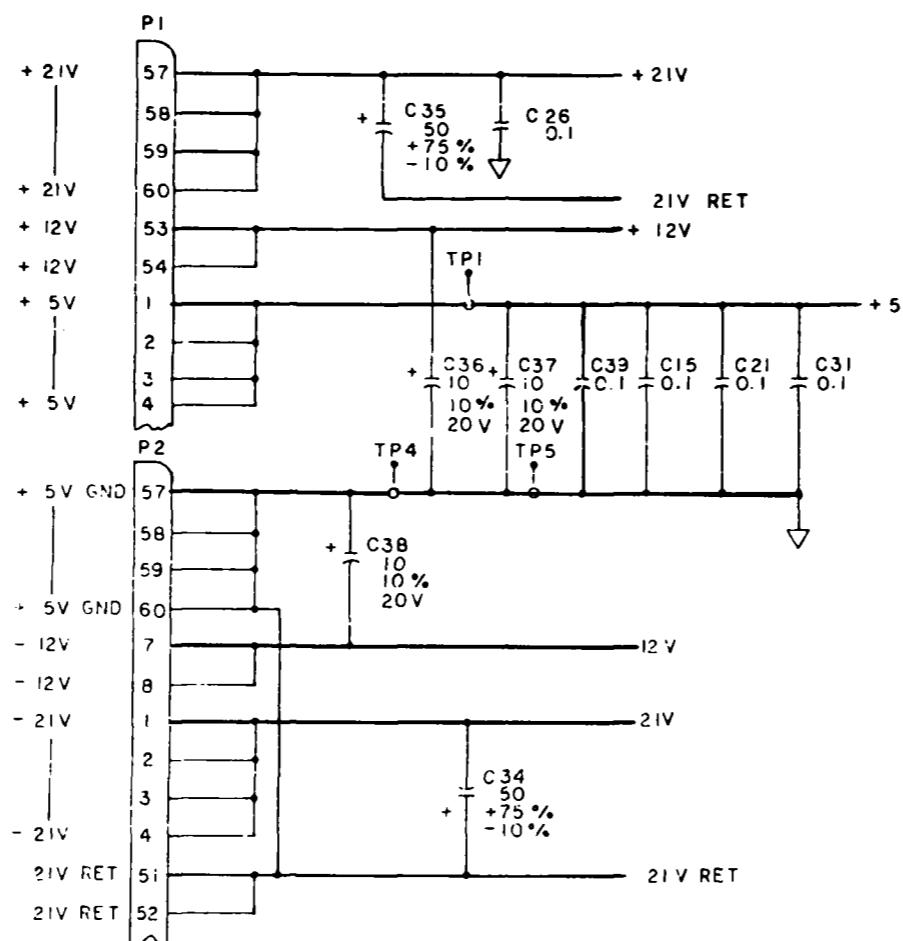
FIGURE 4-11 (SH 5 OF 5)
CIRCUIT CARD ASSEMBLY,
PROCESSOR

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. ALL RESISTANCE VALUES ARE IN OHMS, 5%, 1/4 W.
2. ALL CAPACITANCE VALUES ARE IN UF,
+80% -20%, 50V.
3. ALL TRANSISTORS ARE 815200.
4. ALL DIODES ARE 800743.
5. THE FOLLOWING CONNECTOR PINS ARE NOT USED:
P1-6,8-12,14,16,19,21-24,26-29,31-34,36,
42,44,46,48,50,55,56.
P2-5,6,9-11,13,15,17-27,29-50,53-56.

- (6)** COMPONENTS NOT INSTALLED:
C23, 25, 29; CR17.

7. REFERENCE NO. 261664, REV. A DRAWING.



U12	7400	800024	7	14	-	-	-
U10	LM339	801257	12	-	-	3	-
U9	74LS122	801836	7	14	-	-	-
U8	74LS33	801838	7	14	-	-	-
U6	TL182C	801879	8	7	6	-	9
U5	NE555	801808	1	8	-	-	-
U4,11	74LS03	801807	7	14	-	-	-
U1,2,3,7	LM301	801806	-	-	7	-	4
RPI,RP2	7.5 K	801006	-	14	-	-	-
REF DES	DEVICE TYPE	DP NO.	GND	+5V	+12V	+21V	-12V
DEVICE CHART							

FIGURE 4-12 (SH 1 OF 4)
CIRCUIT CARD ASSEMBLY,
MOTOR DRIVER

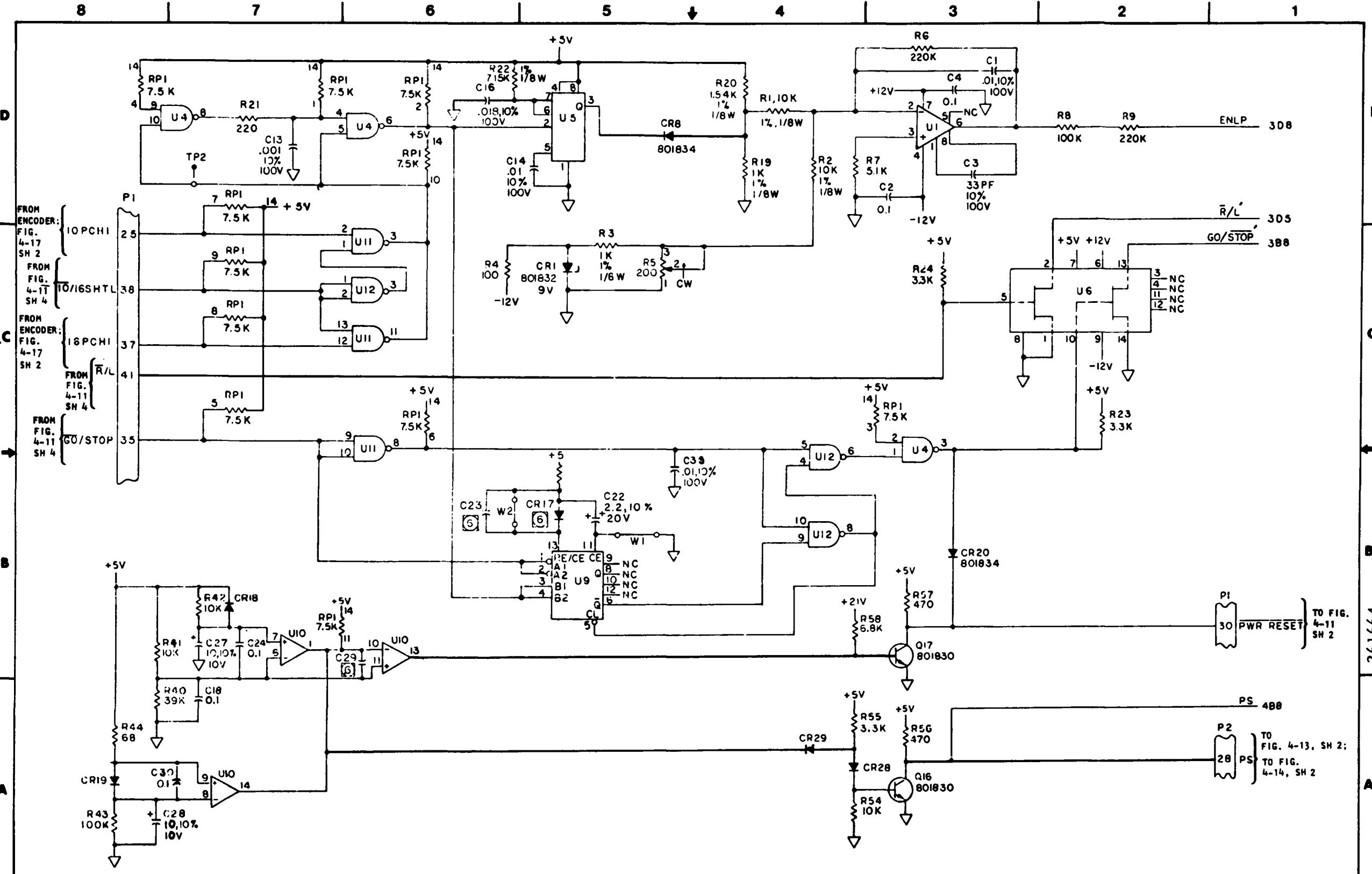
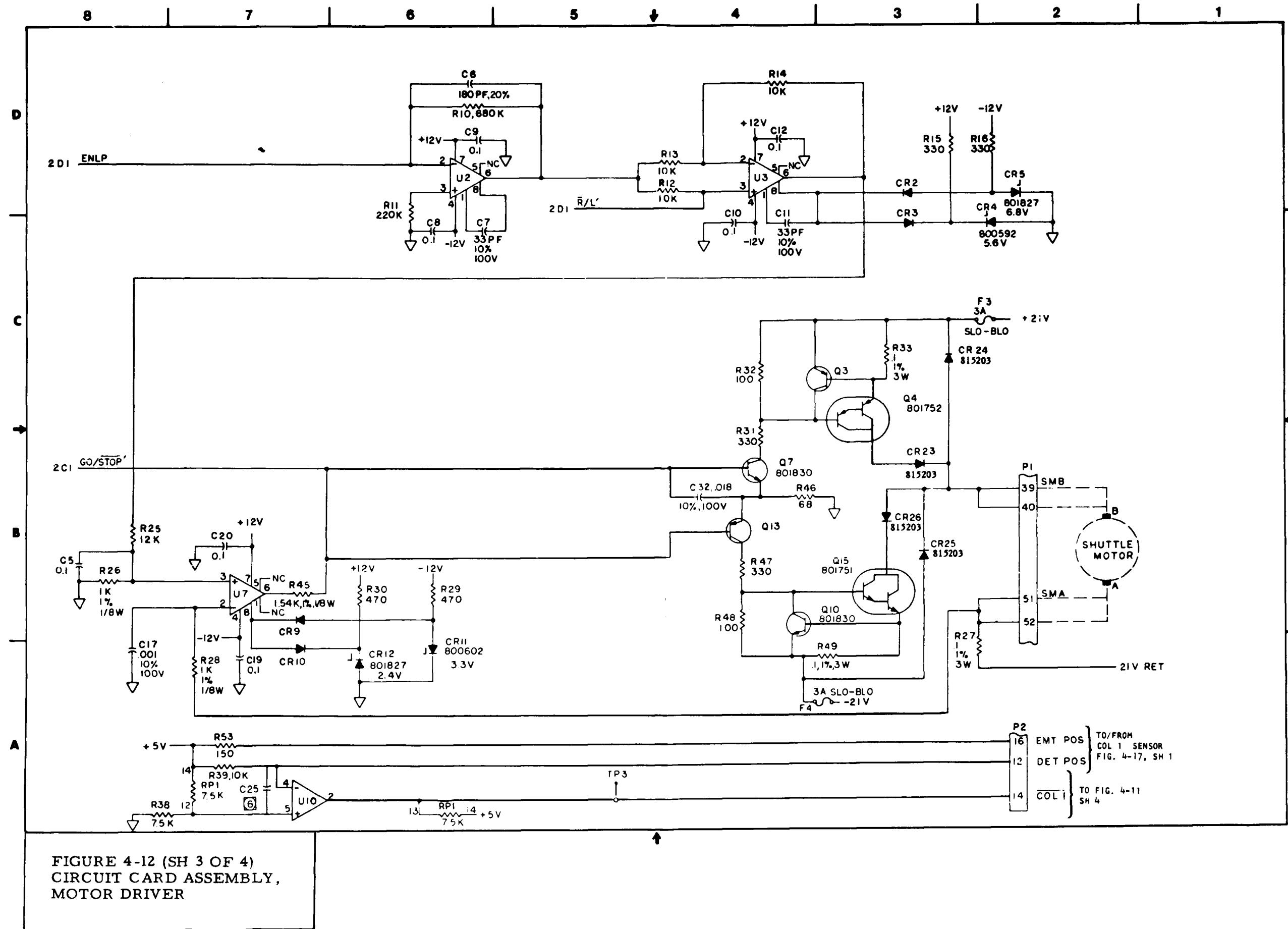


FIGURE 4-12 (SH 2 OF 4)
CIRCUIT CARD ASSEMBLY,
MOTOR DRIVER



8 | 7 | 6 | 5 | ↓ | 4 | 3 | 2 | 1

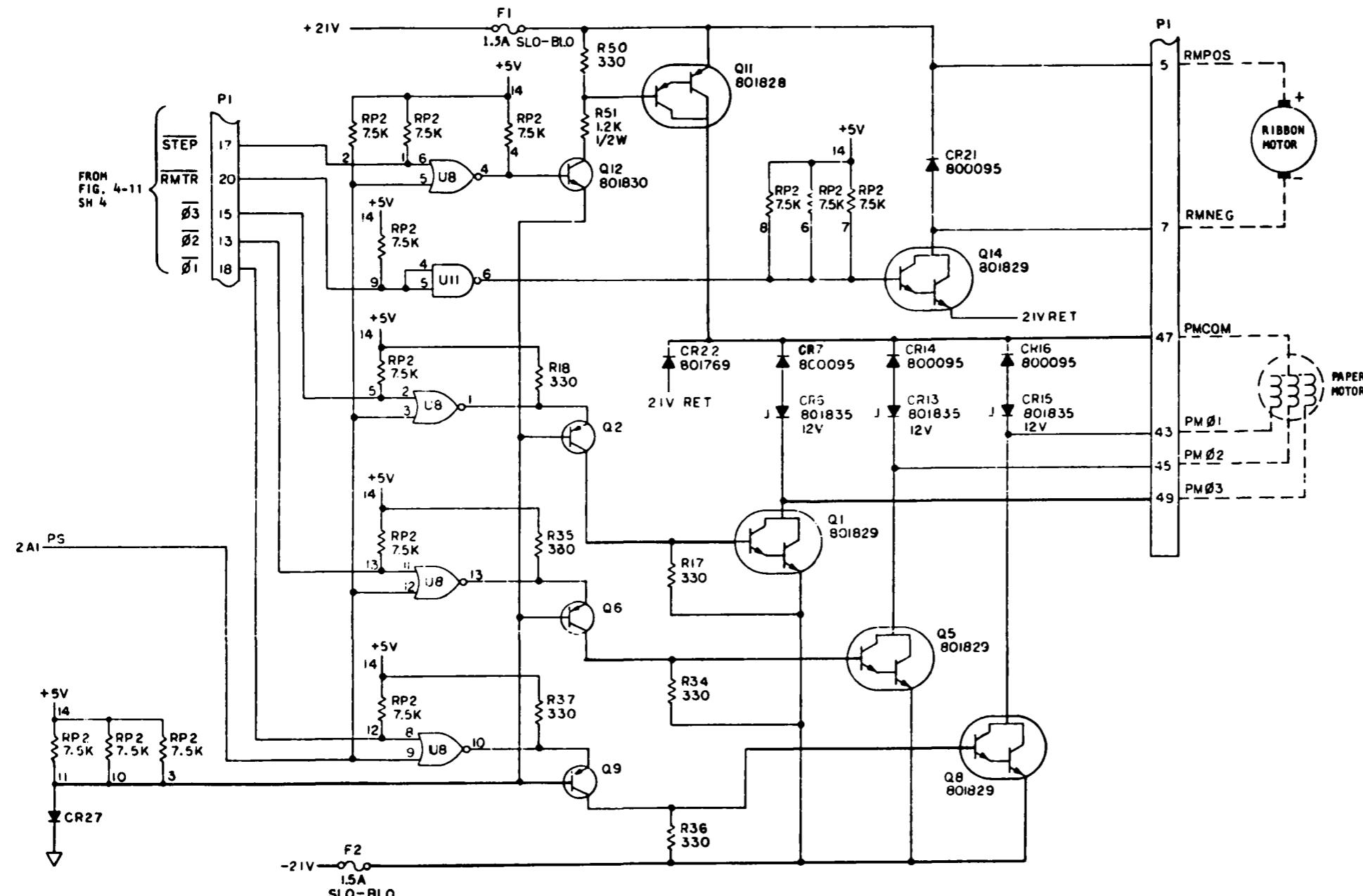


FIGURE 4-12 (SH 4 OF 4)
CIRCUIT CARD ASSEMBLY,
MOTOR DRIVER

8 7 6 5 4 3 2 1

D

D

C

C

10. ALL DIODES ARE IN 4934.

9. TRANSISTORS ARE:

TIP 121 Q30-43

TIP 126 Q15-29

8. REFER TO MOTHER BOARD SCHEMATIC 245694

FOR OFF-BOARD SIGNAL LOCATIONS.

7. SOURCE AND DESTINATION POINTS OF INTERRUPTED
SIGNAL LOCATIONS ARE CODED BY SHEET NO AND
ZONE LOCATION(E.G. 7C2 IS SHEET 7, ZONE C 2)6. POWER AND GROUND FOR ALL INTEGRATED
CIRCUITS WILL BE AS FOLLOWS:

TOTAL NO. OF PINS/IC	+5V (Vee) PIN NO.	GND PIN NO.
8	8	4
14	14	7

5. INTEGRATED CIRCUITS ARE:
(GENERIC PART NOS. ARE FOR REFERENCE ONLY.)800024-003 7400 U12,16,19,23
801798-003 75463 U13,14,17,18,21,22,24

RESISTOR NETWORKS ARE:

801957-681 U1,5,7,11 801957-152 U3,20
801597-821 U2,8 801957-272 U4,9,10,15

4. ALL CAPACITANCE VALUES ARE IN MICROFARADS, 20%, 50 VOLTS.

3. ALL RESISTANCE VALUES ARE IN OHMS, 5%, 1/4W.

2. INTERPRET REFERENCE DESIGNATIONS PER DPC SPEC 850027.

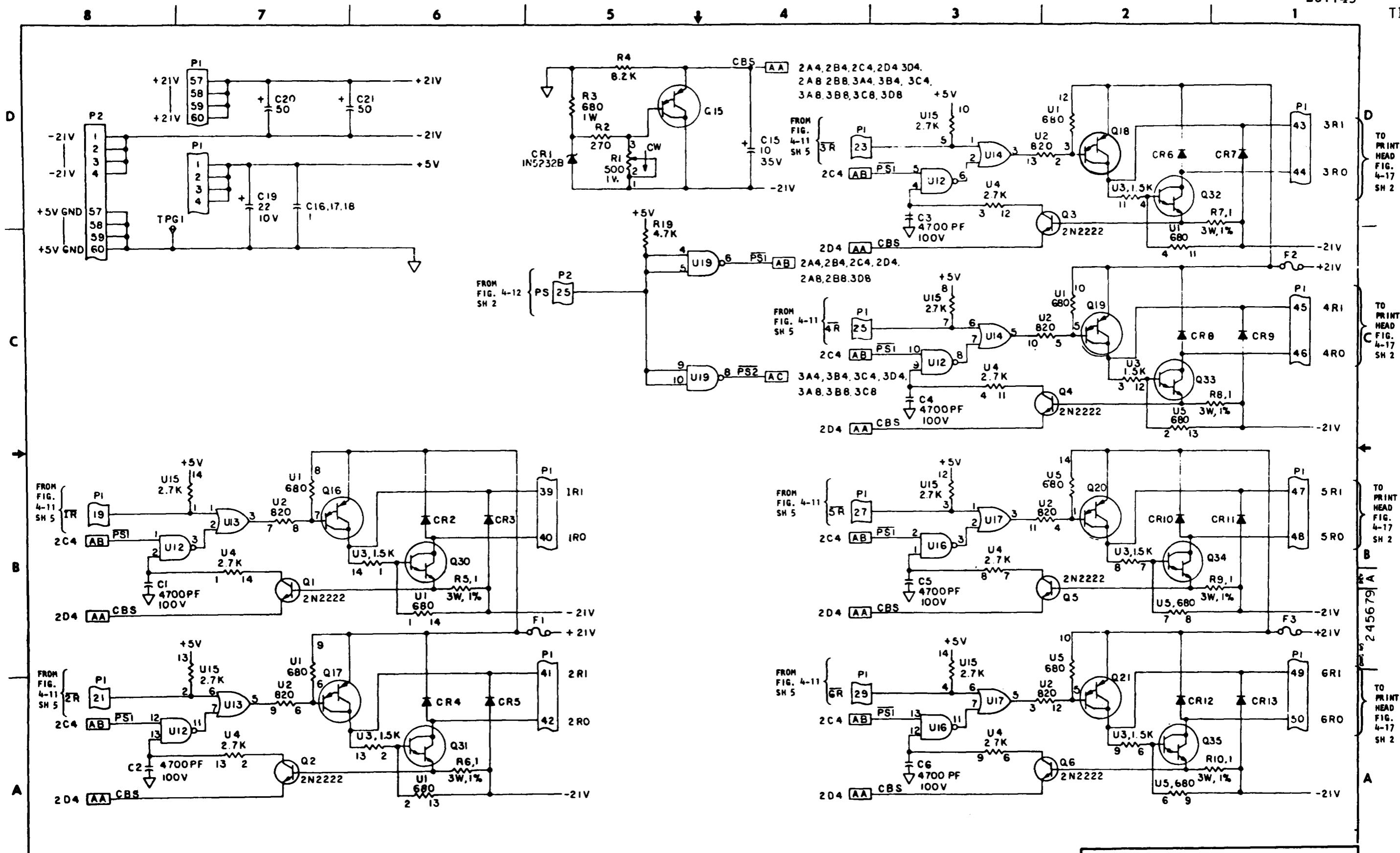
1. INTERPRET ELECTRONIC SYMBOLS PER DPC SPEC 850026.

NOTES (UNLESS OTHERWISE SPECIFIED)

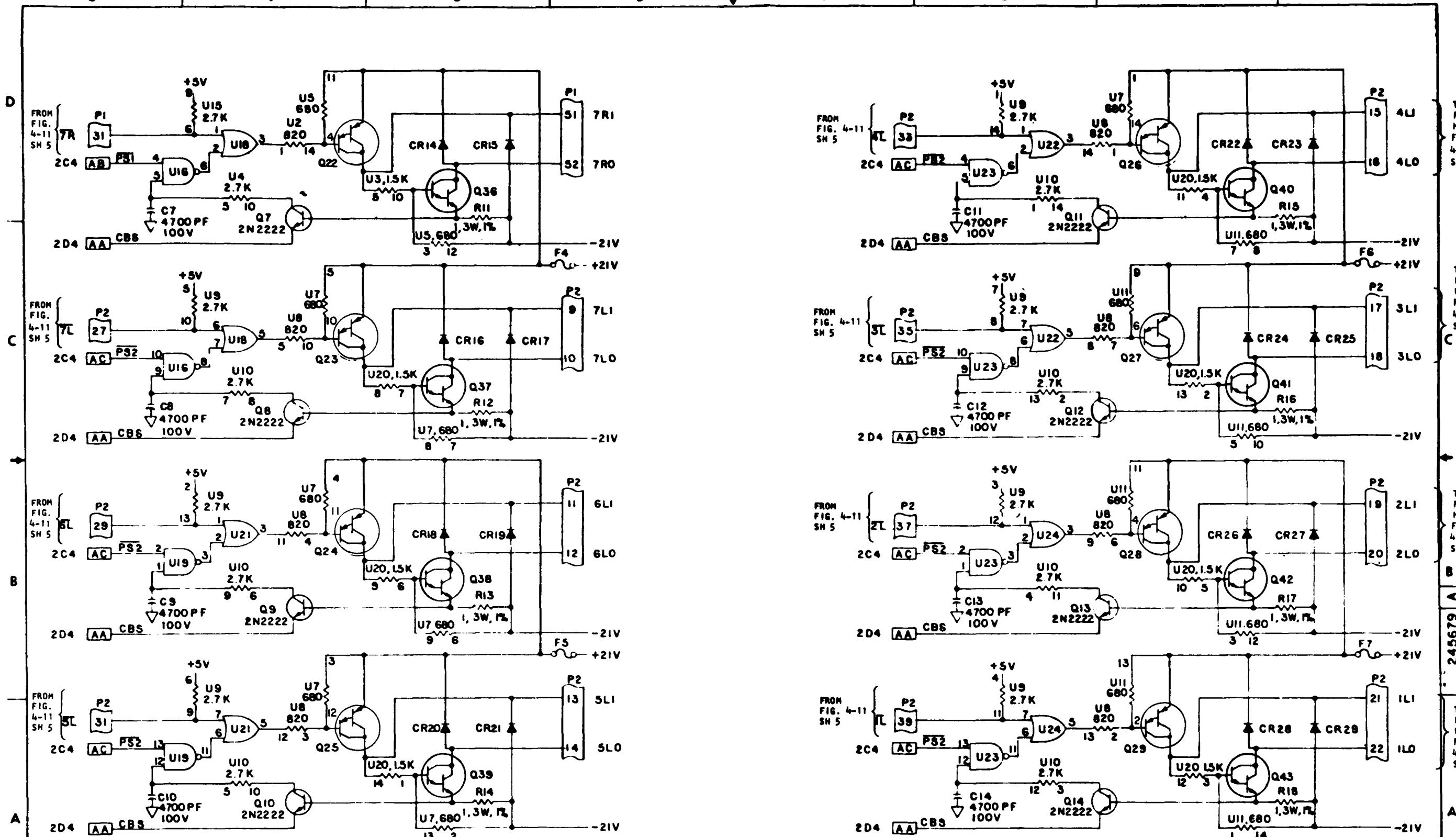
245694-A

A

FIGURE 4-13 (SH 1 OF 3)
CIRCUIT CARD ASSEMBLY
M200 WIRE DRIVER



**FIGURE 4-13 (SH 2 OF 3)
CIRCUIT CARD ASSEMBLY
M200 WIRE DRIVER**



**FIGURE 4-13 (SH 3 OF 3)
CIRCUIT CARD ASSEMBLY
M200 WIRE DRIVER**

8 | 7 | 6 | 5 | ↓ | 4 | 3 | 2 | 1

D

D

C

C

B

B

A

A

10. ALL DIODES ARE IN 4934.

9. TRANSISTORS ARE:

TIP 121 Q30-43
TIP 126 Q15-29

8. REFER TO MOTHER BOARD SCHEMATIC 245694
FOR OFF-BOARD SIGNAL LOCATIONS.

7. SOURCE AND DESTINATION POINTS OF INTERRUPTED
SIGNAL LOCATIONS ARE CODED BY SHEET NO AND
ZONE LOCATION (E.G. 7C2 IS SHEET 7, ZONE C 2)

6. POWER AND GROUND FOR ALL INTEGRATED
CIRCUITS WILL BE AS FOLLOWS:

TOTAL NO. OF PIPS/IC	+5V (V _{cc}) PIN NO.	GND PIN NO.
8	8	4
14	14	7

5. INTEGRATED CIRCUITS ARE:
(GENERIC PART NOS. ARE FOR REFERENCE ONLY)

800024-003 7400 U1,2,16,19,
801798-003 79463 U13,14,17,18,

RESISTOR NETWORKS ARE:

801957-681 U1,9 801957-152 U3
801597-821 U2 801957-272 U4,15

4. ALL CAPACITANCE VALUES ARE IN MICROFARADS, 20%, 50 VOLTS.

3. ALL RESISTANCE VALUES ARE IN OHMS, 5%, 1/4W.

2. INTERPRET REFERENCE DESIGNATIONS PER DPC SPEC 850027.

1. INTERPRET ELECTRONIC SYMBOLS PER DPC SPEC 850028.

NOTES (UNLESS OTHERWISE SPECIFIED)

SPARES:

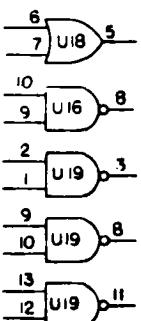


FIGURE 4-14 (SH 1 OF 2)
CIRCUIT CARD ASSEMBLY
M120 WIRE DRIVER

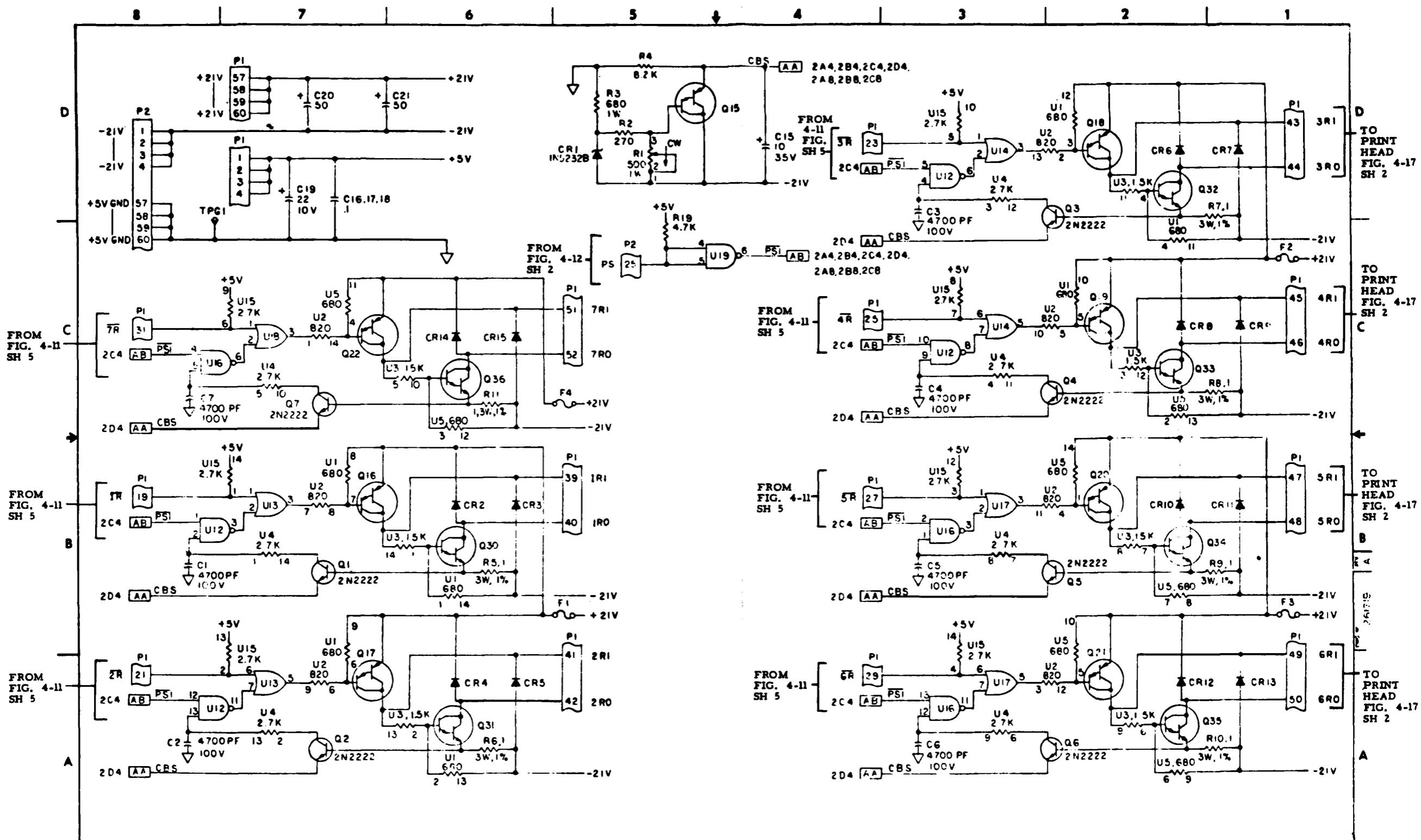


FIGURE 4-14(SH 2 OF 2)
CIRCUIT CARD ASSEMBLY
M120 WIRE DRIVER

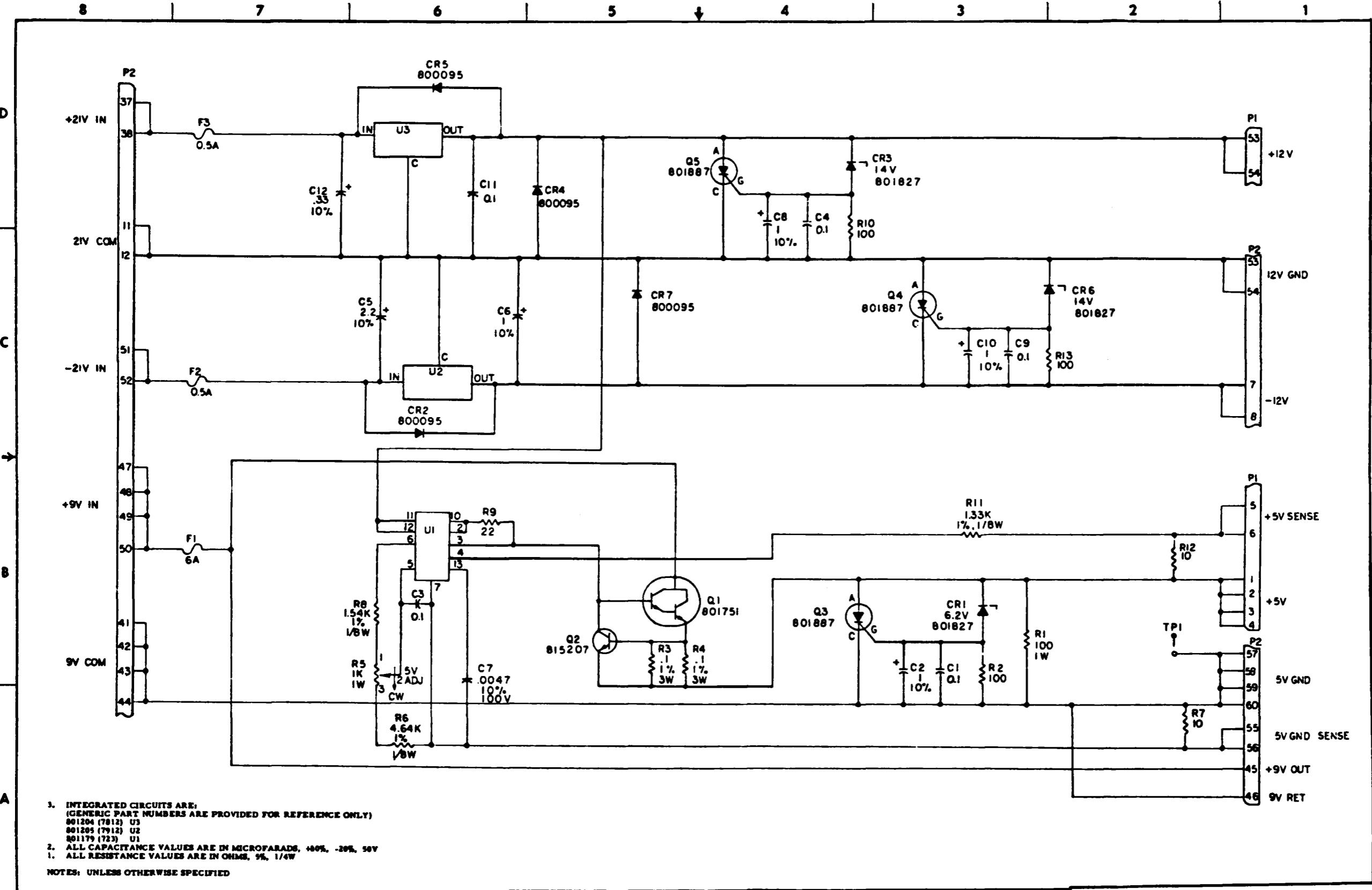
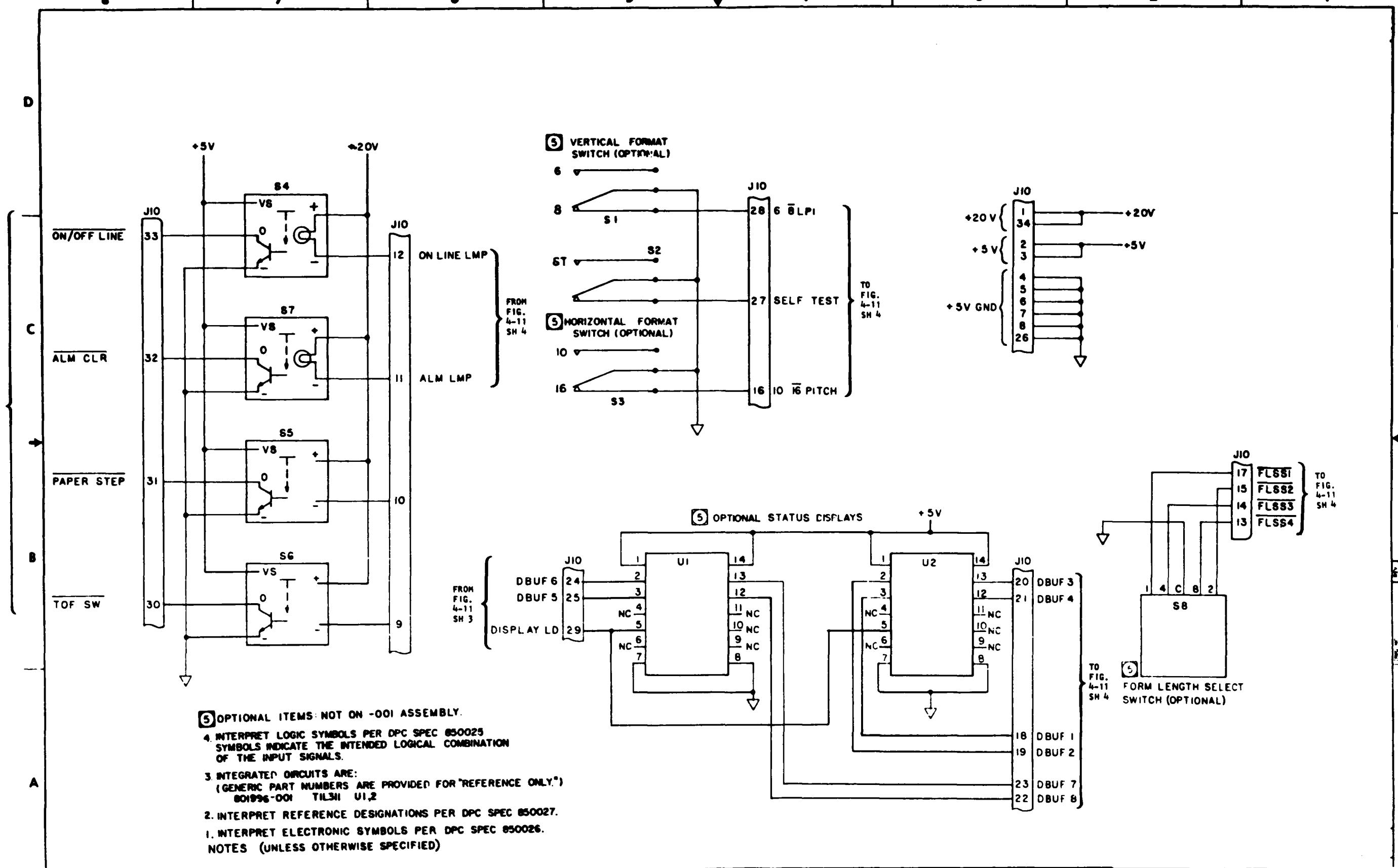
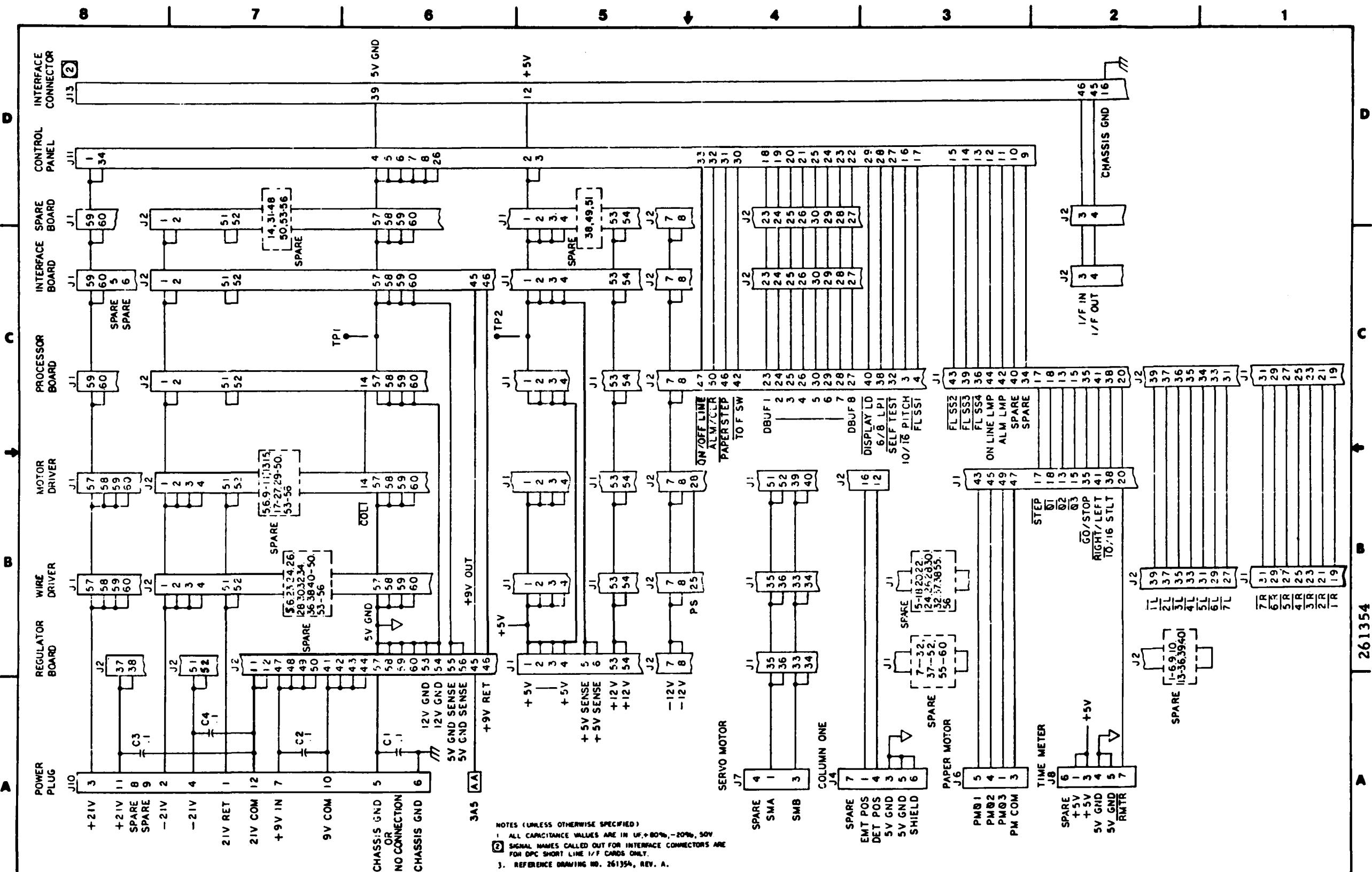
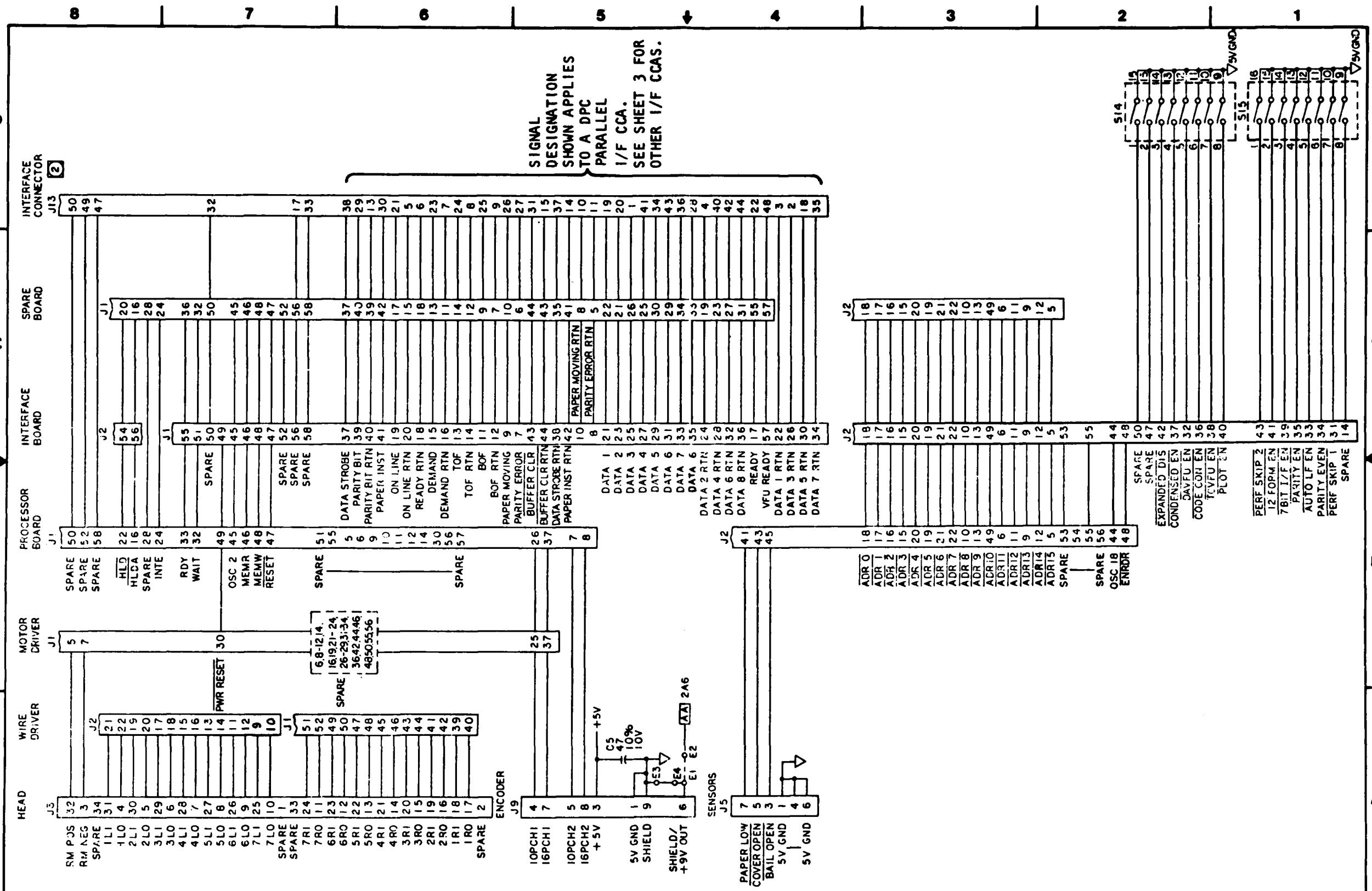
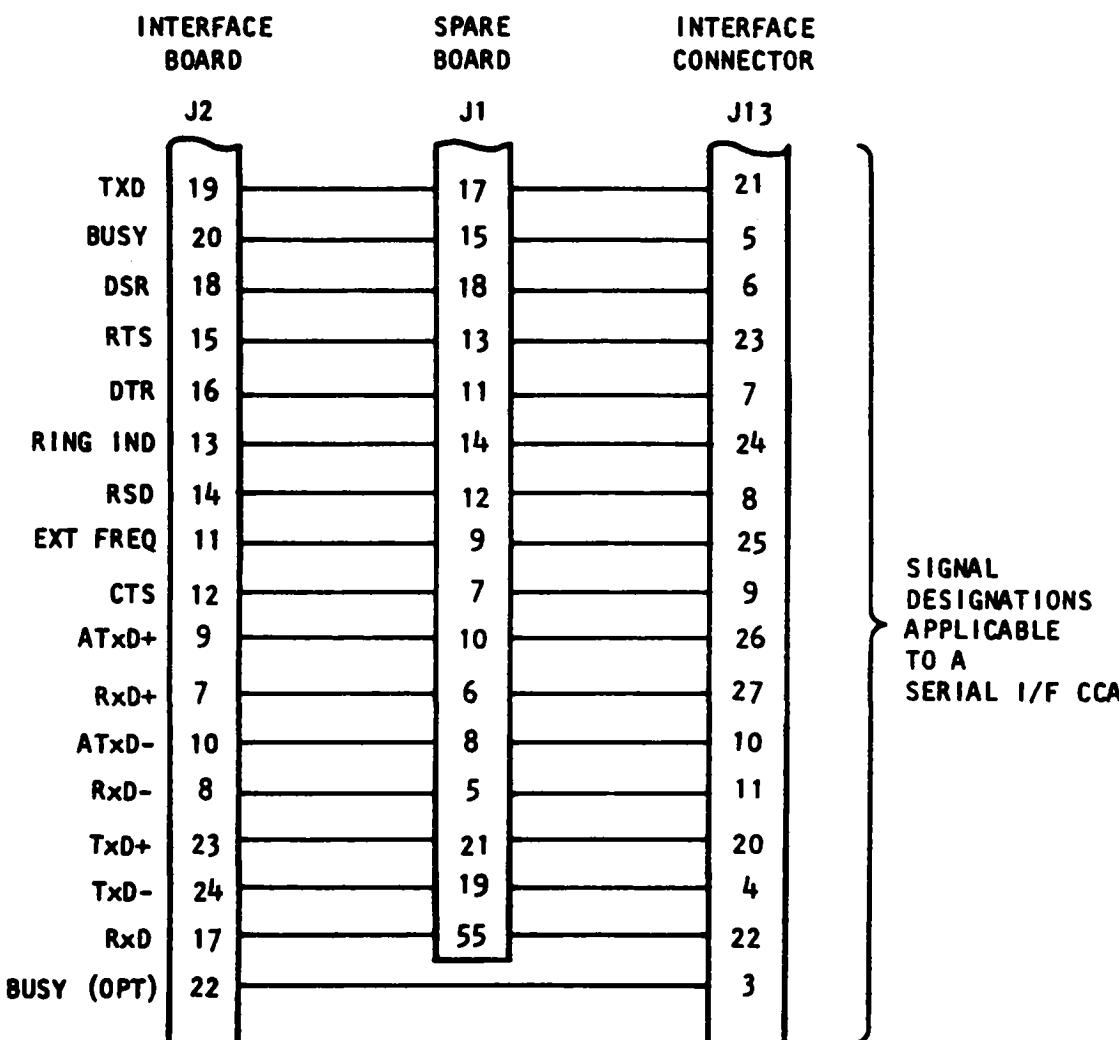


FIGURE 4-15 (SH 1 OF 1)
CIRCUIT CARD ASSEMBLY
REGULATOR









	INTERFACE BOARD J1	SPARE BOARD J1	INTERFACE CONNECTOR J12
+5V			
DATA STROBE*	37	37	38
SLCT	19	17	21
SLCT RTN	20	15	5
BUSY RTN	18	18	6
ACKLG*	15	13	23
ACKLG RTN	16	11	7
OSCXT	13	14	24
OSCXT RTN	14	12	8
PE	11	9	25
PE RTN	12	7	9
FAULT*	9	10	26
INPUT PRIME*	43	44	31
INPUT PRIME RTN	44	43	15
DATA STROBE RTN	38	35	37
FAULT RTN	10	8	10
DATA 1	21	22	19
DATA 2	23	21	20
DATA 3	25	26	1
DATA 4	27	25	41
DATA 5	29	30	34
DATA 6	31	29	43
DATA 7	33	34	36
DATA 8	35	33	28
DATA 2 RTN	24	19	4
DATA 4 RTN	28	23	40
DATA 6 RTN	32	27	42
DATA 8 RTN	36	31	44
BUSY	17	55	22
DATA 1 RTN	22		3
DATA 3 RTN	26		2
DATA 5 RTN	30		18
DATA 7 RTN	34		35
		CHASSIS GND	16
			39
		SIGNAL GND	

FIGURE 4-17 SH 3 OF 3)
CIRCUIT CARD ASSEMBLY
MOTHER BOARD (WIRE LIST)

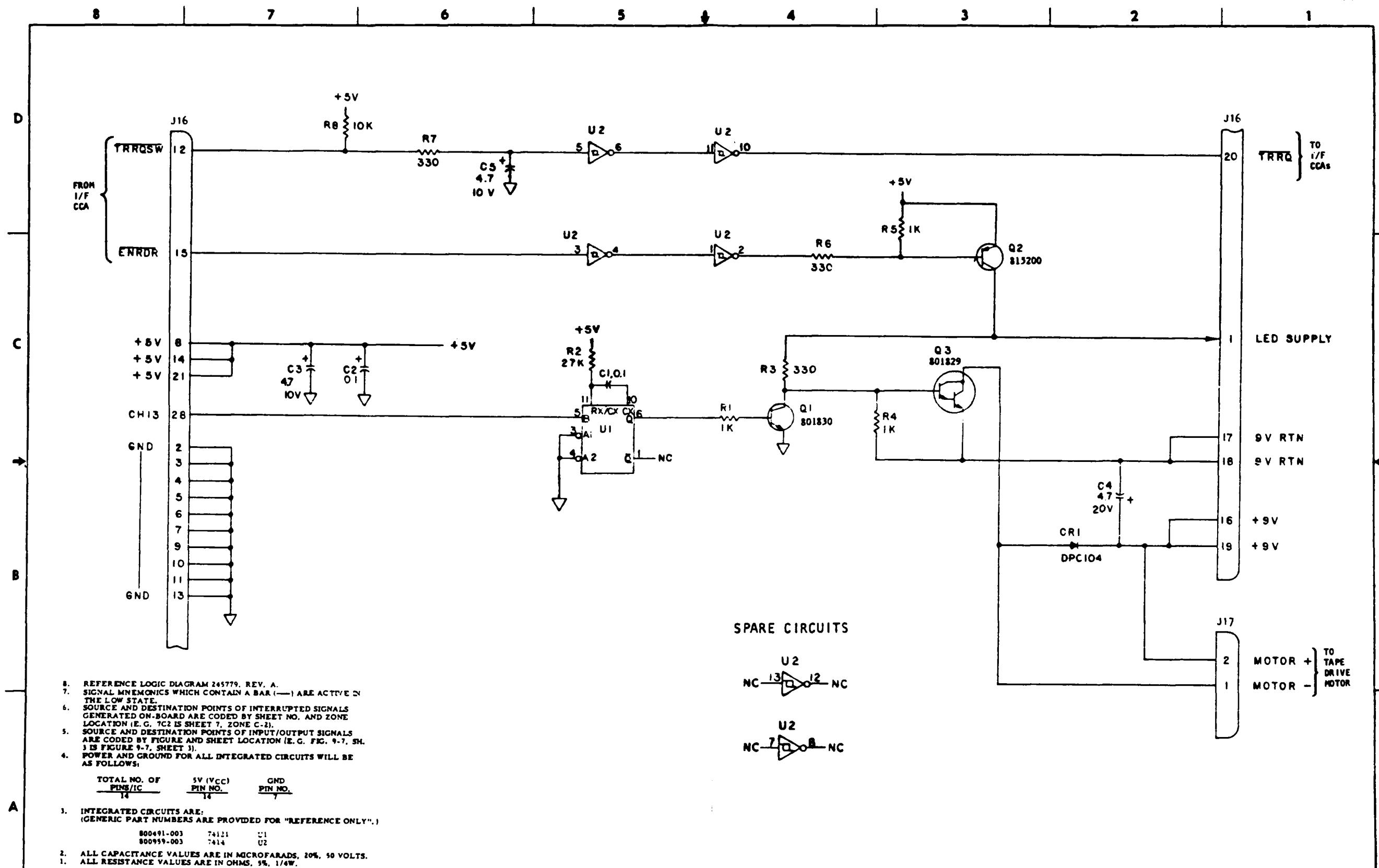


FIGURE 4-18 (SH 1 OF 1)
CIRCUIT CARD ASSEMBLY
TCVFU

SECTION V**ILLUSTRATED PARTS LIST INDEX****ILLUSTRATED PARTS LIST****5.1 INTRODUCTION**

This section provides information on the assemblies, subassemblies, and parts that comprise the printer. The illustrated parts list index lists the figure and table numbers, along with their titles and page numbers. Each illustration (figure) in this section supports its associated parts list and locates the assembly or part as an aid in reassembly or disassembly procedures.

Some parts, such as common hardware items, optional assemblies, and control panel buttons and lamps, are available only as part of a kit. In addition, special kits contain erasable, programmable, read-only memory (EPROM) integrated circuits that are used with the circuit card assemblies.

5.2 EPROM KITS

EPROM kits are designated with numerical suffixes 2708 or 2716 to reflect memory architecture. Depending upon the configuration of the circuit card assembly, either the 2708 or the 2716 EPROM will be used; however, the EPROMs are not interchangeable. Ensure that the proper EPROM kit is ordered for replacement of defective PROMs.

5.3 OPTIONAL ASSEMBLIES

All optional assemblies are designated with the word (Option) in parentheses.

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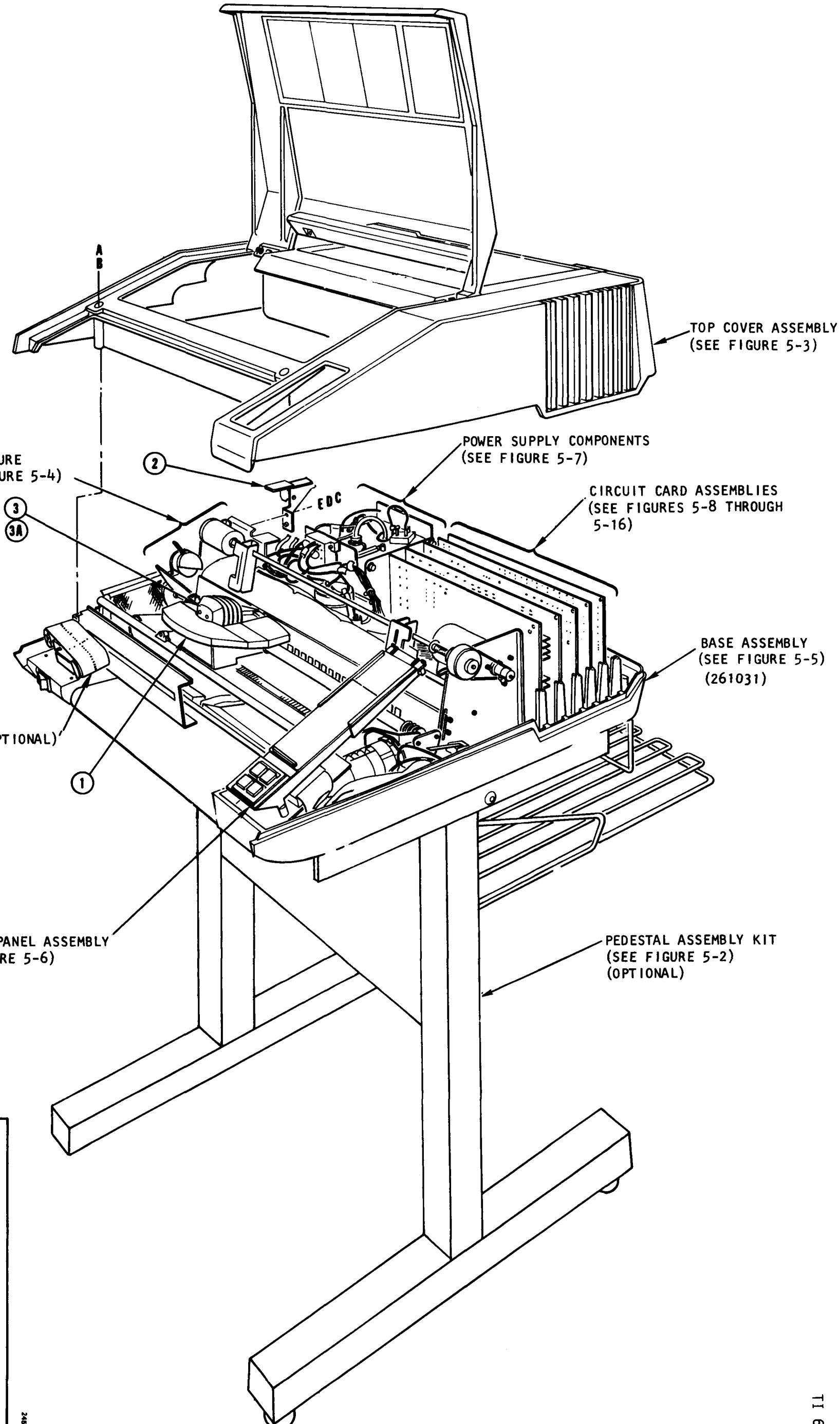


Figure 5-1. Printer Assemblies

261231101

TABLE 5-1. PRINTER ASSEMBLIES

Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-1	Printer Assemblies			REF
1.	Cassette Assembly, Ribbon		261319-005	1
2.	Switch, Door Open Assembly		261146-001	1
3.	Print Head, M200		245601-002	1
3a.	Print Head, M120		261705-002	1
A.	Screw, Pan Head, Recessed, Steel, M4 x 10mm (Qty 2)*		Kit No. 249747-001	
B.	Washer, Flat, Steel, Size M4, 9mm Max OD (Qty 2)*		Kit No 249747-001	
C.	Screw, Hex Head, Cap, Steel, M3x8mm (Qty 1)*		Kit No. 249747-001	
D.	Washer, Lock, Internal Tooth, Steel, Size M3 (Qty 1)*		Kit No. 249747-001	
E.	Washer, Flat, Steel, Size M3, 7mm Max OD (Qty 1)*		Kit No. 249747-001	

* Available only as part of a Kit.

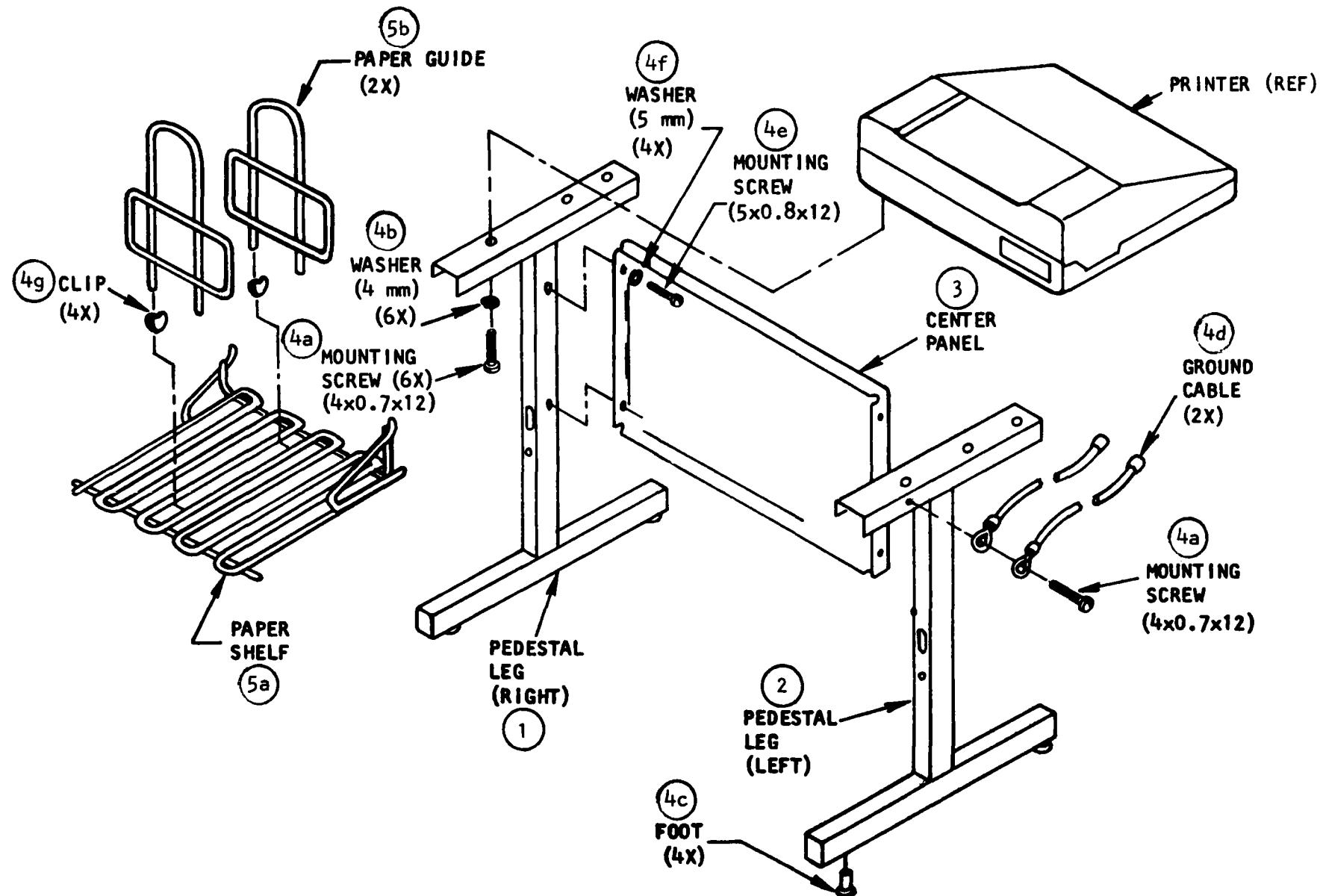


Figure 5-2. Pedestal Assembly
(Option)

TABLE 5-2. PEDESTAL ASSEMBLY (OPTION)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-2	Pedestal Assembly (Option)			
1.	Pedestal Leg, Right Hand*		261648-001	REF
2.	Pedestal Leg, Left Hand*			1
3.	Center Panel*			1
4.	Hardware Kit*			1
4a.	Screw, Hex Head, 4mm x 0.7mm x 12mm		815709-412	7
4b.	Washer, 4mm, Oversize		801503-104	6
4c.	Pedestal Foot, 5/16-18			4
4d.	Ground Cable, 12"		815527-002	2
4e.	Screw, Hex Head, 5mm x 0.8mm x 12mm		815709-512	4
4f.	Washer, 5mm, Oversize		801503-105	4
4g.	Clip, Paper Guide		247963-001	4
5.	Paper Basket*			1
5a.	Paper Shelf		272802-001	1
5b.	Paper Guide		272801-001	2

* Available only as part of the Pedestal Assembly Kit.

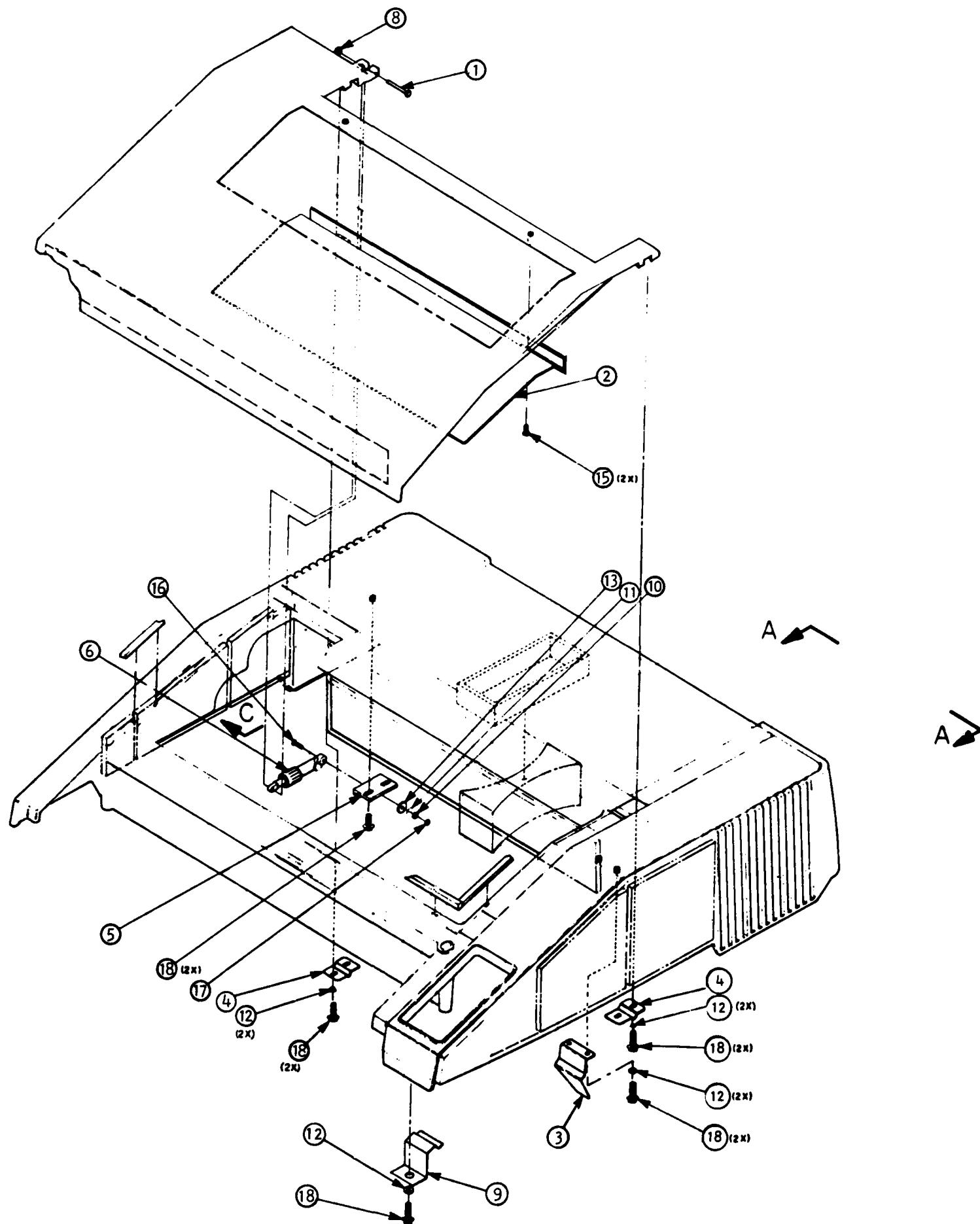


Figure 5-3. Top Cover Assembly

TABLE 5-3. TOP COVER ASSEMBLY

Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-3	Top Cover Assembly		271859-001	REF
1.	Pin, Damper		249507-001	1
2.	Window		261224-001	1
3.	Spring, Control Panel		245543-001	1
4.	Hinge, Retainer		261137-001	2
5.	Mounting Bracket, Damper		245852-001	1
6.	Damper, Door		801968-001	1
7.	Keeper		801949-002	2
8.	Fastener, Speed Clip, Push On, 3.93mm		810050-002	1
9.	Clip, Control Panel		261349-001	1
10.	Washer, Split Lock, 3.5mm Max OD		801505-003	5
11.	Washer, Flat, M3, 7mm Max OD		801503-004	5
12.	Washer, Flat, M4, 9mm Max OD		801503-004	7
13.	Washer, Adjust Knob		245763-001	1
14.	Screw, X-Recessed, M3 x 16mm		801501-316	4
15.	Screw, X-Recessed, M4 x 8mm		801501-408	2
16.	Screw, X-Recessed, M3 x 12mm		801501-312	1
17.	Nut, Hex, Large Pattern, M3 x 0.5		801502-003	5
18.	Screw, Hex Head, M4 x 8		815709-408	9

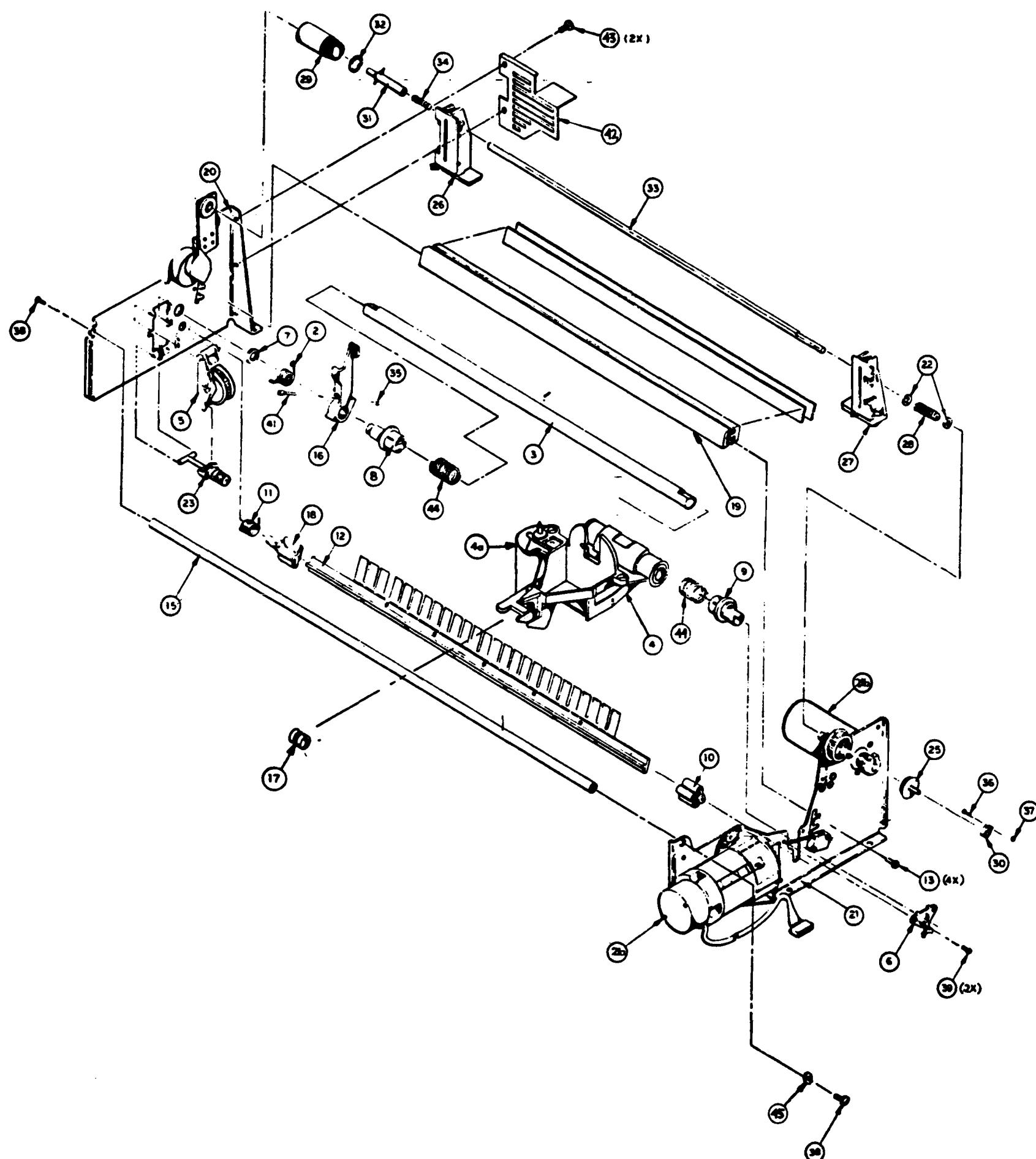


Figure 5.4.
Mechanical Structure
Assembly (Sheet 1 of 2)

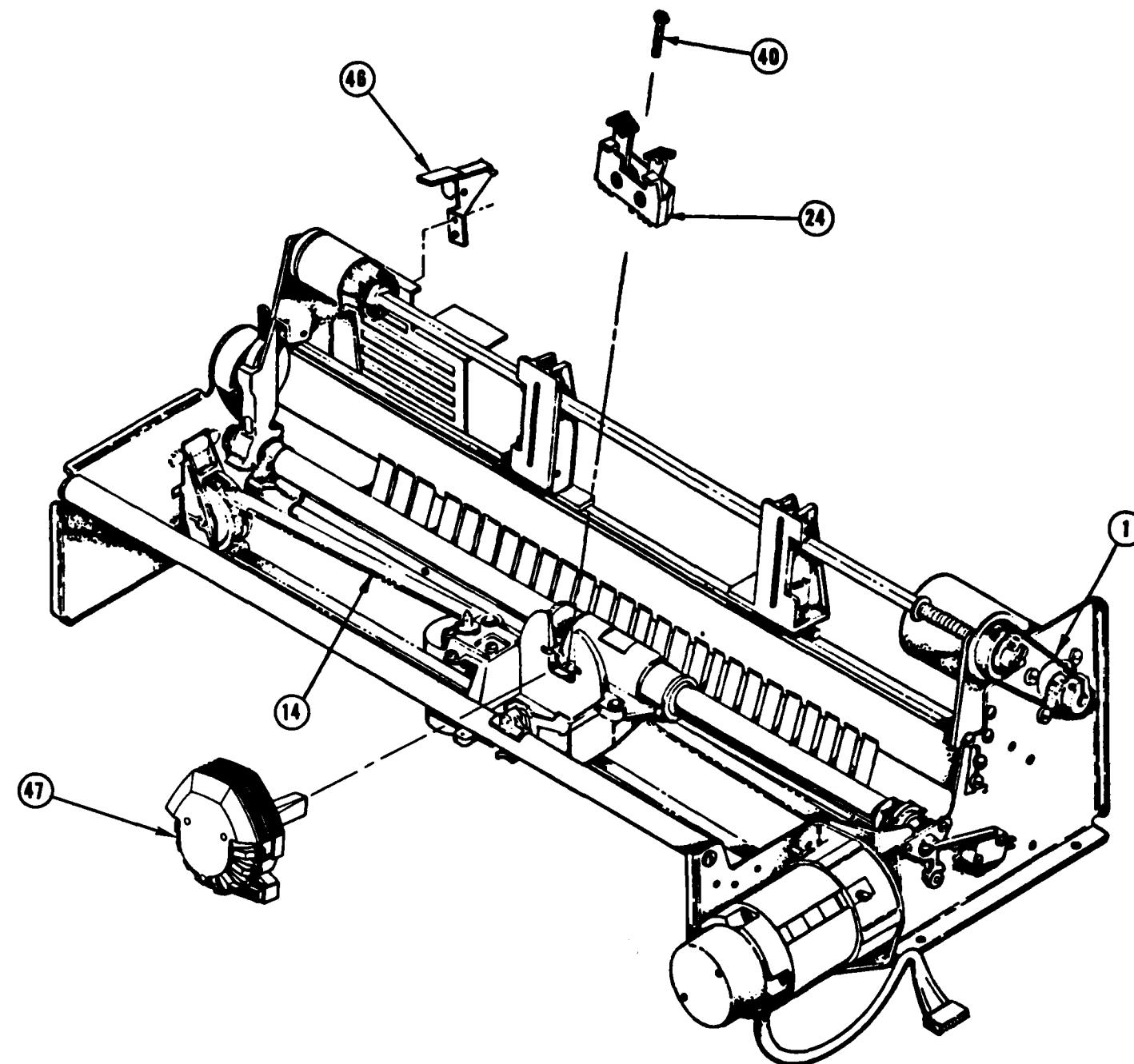


Figure 5-4. Mechanical Structure
Assembly (Sheet 2 of 2)

TABLE 5-4. MECHANICAL STRUCTURE ASSEMBLY

Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-4	Mechanical Structure Assembly		261476-001	REF
1.	Belt, Timing, Paper Feed		801862-002	1
2.	Spring, Paper Chute		245733-001	1
3.	Bar, Front Guide		261599-001	1
4.	Shuttle Assembly		272048-001	1
4a.	Ribbon Motor Assembly		249610-001	1
5.	Idler Pulley Assembly		245759-001	1
6.	Bearing, Front Bar		245731-001	1
7.	Washer, Front Bar		245712-001	1
8.	End Cap, Front Bar, Left Hand		272047-001	1
9.	End Cap, Front Bar, Right Hand		249791-001	1
10.	End Cap, Paper Tension, Right Hand		245588-001	1
11.	Spring, Paper Tension		245573-001	1
12.	Finger Assembly		254420-001	1
13.	Screw, Hex Head, M4 x 12		815709-412	4
14.	Belt, Timing, Shuttle Drive, 23.9 Long x 3/8 Wide		800299-018	1
15.	Bar, Rear Guide		254746-001	1
16.	Lever, Paper Chute		272061-001	1
17.	Bearing, Rear Bar		254158-001	1
18.	End Cap, Paper Tension, Left Hand		245587-001	1
19.	Platen, Machined		260700-001	1

TABLE 5-4. MECHANICAL STRUCTURE ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
20.	Left Frame Assembly		261539-001	1
21.	Right Frame Assembly		261475-001	1
21a.	Driver Control Assembly (Shuttle Motor)		245758-001	1
21b.	Motor, Paper Feed		245582-001	1
22.	Washer, Flat		801951-001	2
23.	Belt Tension Adjuster Assembly		254186-001	1
24.	Head Clamp Assembly, Standard		254156-001	1
25.	Spline, Drive		245558-001	1
26.	Tractor Assembly, Left Hand		254475-002	1
27.	Tractor Assembly, Right Hand		254475-001	1
28.	Compression Spring, Tractor		261688-001	1
29.	Cylinder, Universal		245586-001	1
30.	Collar		254499-001	1
31.	Hub, Universal		245584-001	1
32.	Yoke, Universal		245585-001	1
33.	Shaft, Tractor Drive		254492-001	1
34.	Spring, Hub		245595-001	1
35.	Nut, Hex, M4 x 0.7		801502-004	1
36.	Screw, Pan Head, Metric, M2.5 x 20		815729-105	1
37.	Nut, Hex, M2.5		801502-025	1

TABLE 5-4. MECHANICAL STRUCTURE ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
38.	Screw, Hex Head, M4 x 10		815709-410	2
39.	Screw, Hex Head, M3 x 8		815709-308	2
40.	Screw, Hex Head, M3 x 12		815709-312	1
41.	Screw, Socket Head, M4 x 12mm		801507-412	1
42.	Guard, Capacitor		249828-001	1
43.	Screw, Hex Head, M4 x 8		815709-408	2
44.	Spring, Shuttle Bumper		245741-001	2
45.	Washer, Flat, M4, 13mm Max OD		801503-104	1
46.	Switch, Door Open Assembly		261146-001	1
47.	Print Head, M-200 Print Head, M-120		245601-002 261705-002	1

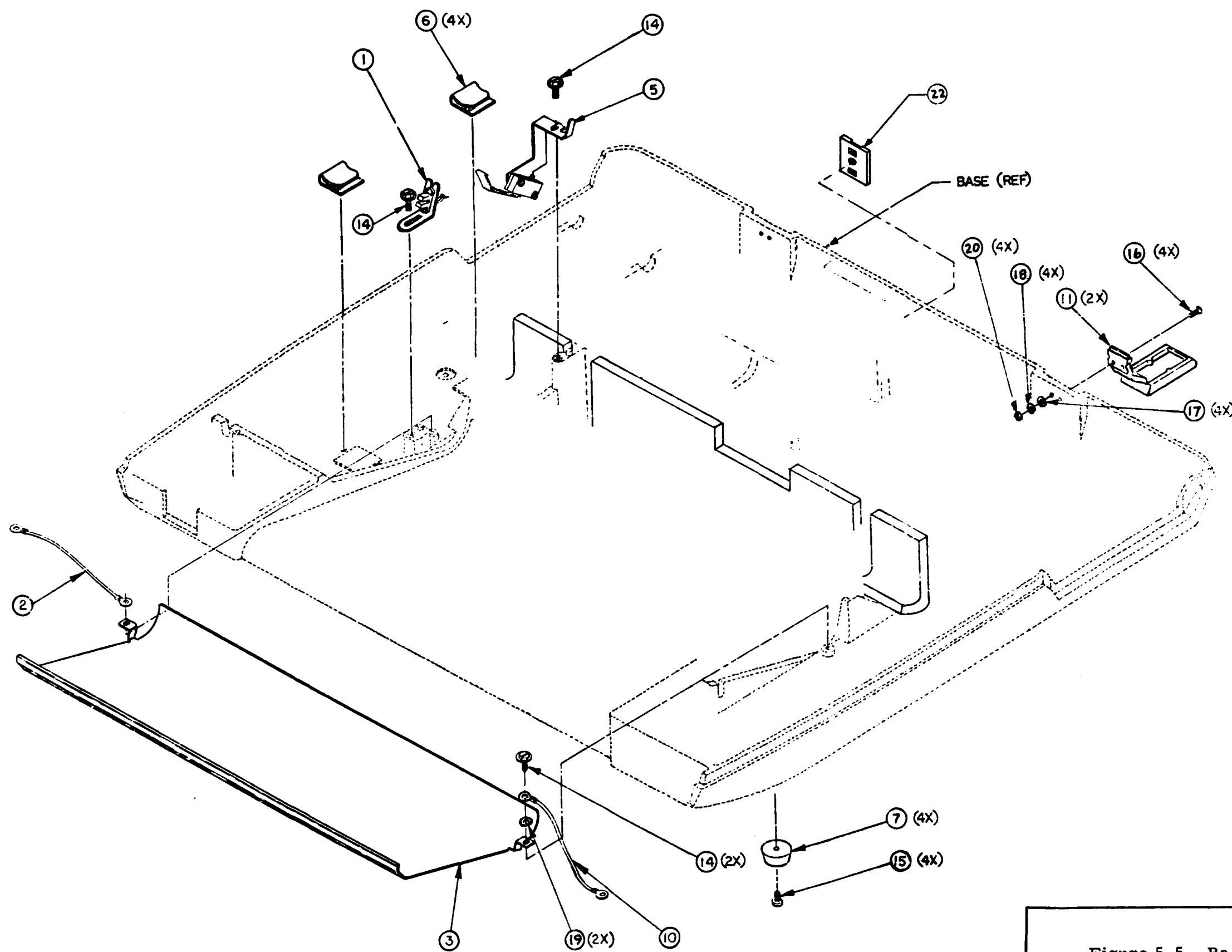
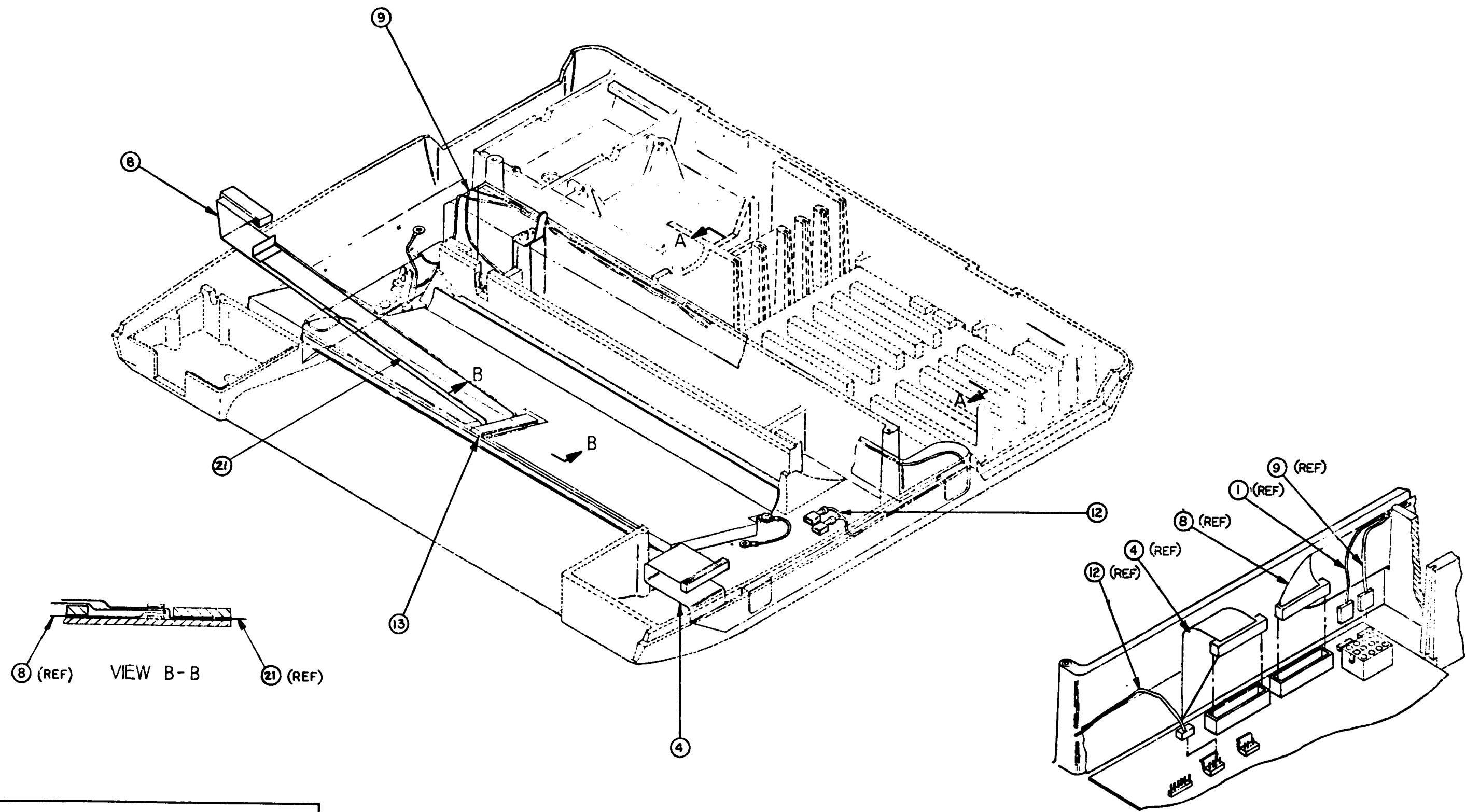


Figure 5-5. Base Assembly
(Sh 1 of 2)



**Figure 5-5. Base Assembly
(Sh 2 of 2)**

TABLE 5-5. BASE ASSEMBLY

Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-5	Base Assembly		261031-001	REF
1.	Column One Assembly		271907-001	1
2.	Ground Strap Assembly, Insulated, 159mm		261419-005	1
3.	Chute, Paper, Front		245580-001	1
4.	Harness, Control Panel Assembly		245829-001	1
5.	Switch Assembly, Paper Out		261003-001	1
6.	Clip, Flat Wire		810049-002	4
7.	Bumper, Recessed, Molded		815703-001	4
8.	Harness, Head Flex Cable		245830-001	1
9.	Harness, Sensor Assembly		245832-001	1
10.	Ground Strap Assembly, Insulated, 96mm		261419-006	1
11.	Latch		801949-001	2
12.	Harness, Servo, Power		245833-001	1
13.	Clamp, Cable, Flat Assembly		249823-001	1
14.	Screw, Hex Head, M4 x 8		815709-408	4
15.	Screw, Pan Head, 8 x .500		801954-004	4
16.	Screw, Flat Head, X-Recessed, M3 x 16mm		801501-316	4
17.	Washer, Split Lock, M3, 7mm Max OD		801503-003	4

TABLE 5-5. BASE ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
18.	Washer, Lock, M3, 5.9mm Max OD		801505-003	4
19.	Washer, Lock, Size 4		801504-004	2
20.	Nut, Hex, Large Pattern, M3 x 0.5		801502-003	4
21.	Ground Assembly, Shuttle		272058-001	1
22.	Anchor, Cable Tie, Nylon		800487-001	1

TCVFU ASSEMBLY

CONTROL PANEL ASSEMBLY

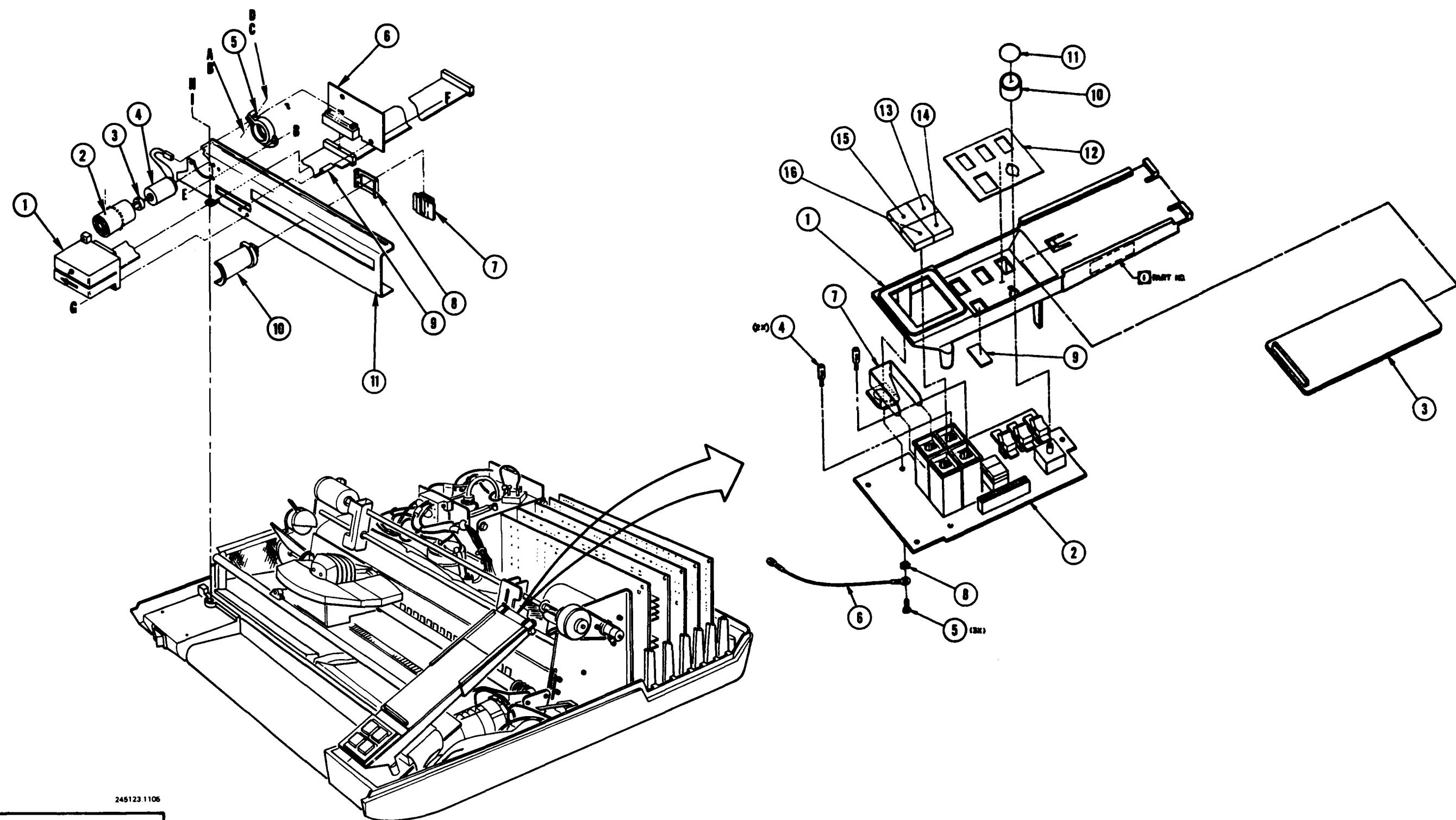


Figure 5-6. TCVFU Assembly
(Option) and
Control Panel
Assembly

TABLE 5-6. TCVFU ASSEMBLY (OPTION) AND CONTROL PANEL ASSEMBLY

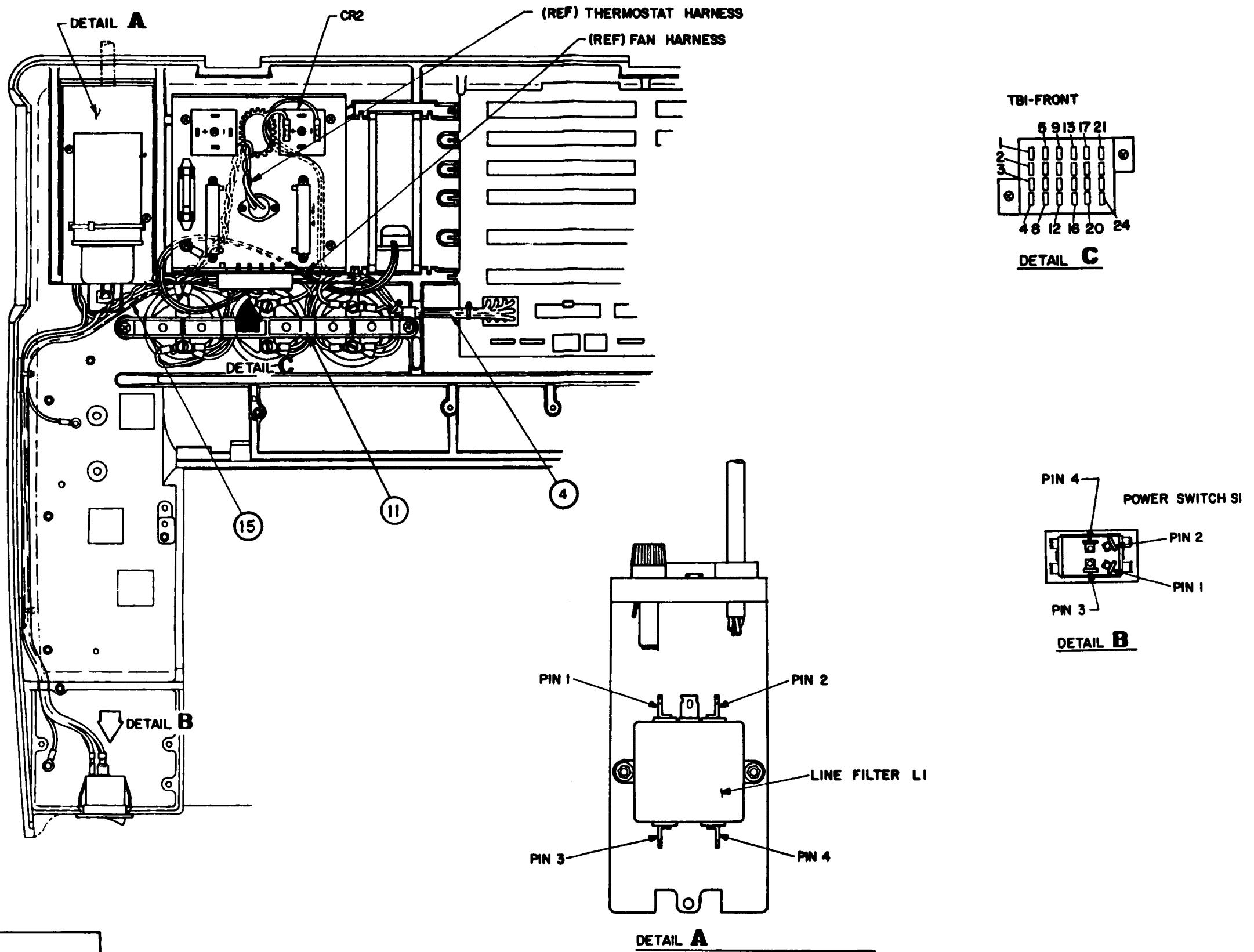
Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-6	<u>TCVFU Assembly (Option)</u>		245549-001	REF
1.	Head, Reader, Photoelectric, 13-Channel, TCVFU		801649-002	1
2.	Sprocket, TCVFU		261286-001	1
3.	Screw, Set, M2.5 x 0.45 x 10mm		810202-001	1
4.	Motor Assembly, TCVFU	B6	249611-001	1
5.	Bracket, Motor Mounting		245847-001	1
6.	Circuit Card Assembly, TCVFU	A9	245775-001	1
7.	Clip, Spring, TCVFU		245889-001	1
8.	Spring, Tension Arm		245597-001	1
9.	Spacer, TCVFU Board		245598-001	2
10.	Tension Arm		245594-001	1
11.	Bracket, TCVFU		245596-001	1
A.	Washer, Flat, Steel, M3, 7mm Max OD (Qty 2)		Kit No. 249747-001	*
B.	Nut, M3 x 0.5, Hex, Steel, Large Pattern (Qty 3)		Kit No. 249747-001	*
C.	Washer, Lock, Ext. Tooth, Steel, Size 4 (Qty 2)		Kit No. 249747-001	*
D.	Screw, Pan Head, Steel, M3 x 10mm (Qty 1)		Kit No. 249747-001	*
E.	Screw, Pan Head, Steel, M3 x 8mm (Qty 2)		Kit No. 249747-001	*
F.	Screw, Pan Head, Steel, M4 x 20mm (Qty 2)		Kit No. 249747-001	*

* Available only as a part of a Kit.

TABLE 5-6. TCVFU ASSEMBLY (OPTION) AND CONTROL PANEL ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
G.	Screw, Pan Head, Steel, M4 x 0.7 x 1mm (Qty 2)		Kit No. 249747-001	*
H.	Screw, Pan Head, Steel, Recessed, M4 x 8 mm (Qty 2)		Kit No. 249747-001	*
I.	Washer, Flat, Steel, M4, 9mm Max OD (Qty 2)		Kit No. 249747-001	*
	<u>Control Panel Assembly, Full Control</u>		261418-016	REF
1.	Housing, Control Panel		249784-001	1
2.	Circuit Card Assembly, Control Panel, Full Control		245865-016	1
3.	Door, Control Panel		245855-001	1
4.	Lamp, Subminiature, Type 13		801931-001	2
5.	Screw, Pan Head, 8 x 0.50		801954-004	3
6.	Cable, Ground Assembly		249505-002	1
7.	Shield, ESD		249594-001	1
8.	Washer, Lock, Size 4		801504-004	1
9.	Window, Display		249536-001	1
10.	Knob, Form Select		245536-001	1
11.	Label, Form Length Knob		249983-001	1
12.	Label, Control Panel		249483-001	1
13.	Key, On Line		249135-001	1
14.	Key, Alarm Clear		249135-002	1
15.	Key, Paper Step		249135-004	1
16.	Key, Top of Form		249135-005	1

* Available as a part of a Kit only.



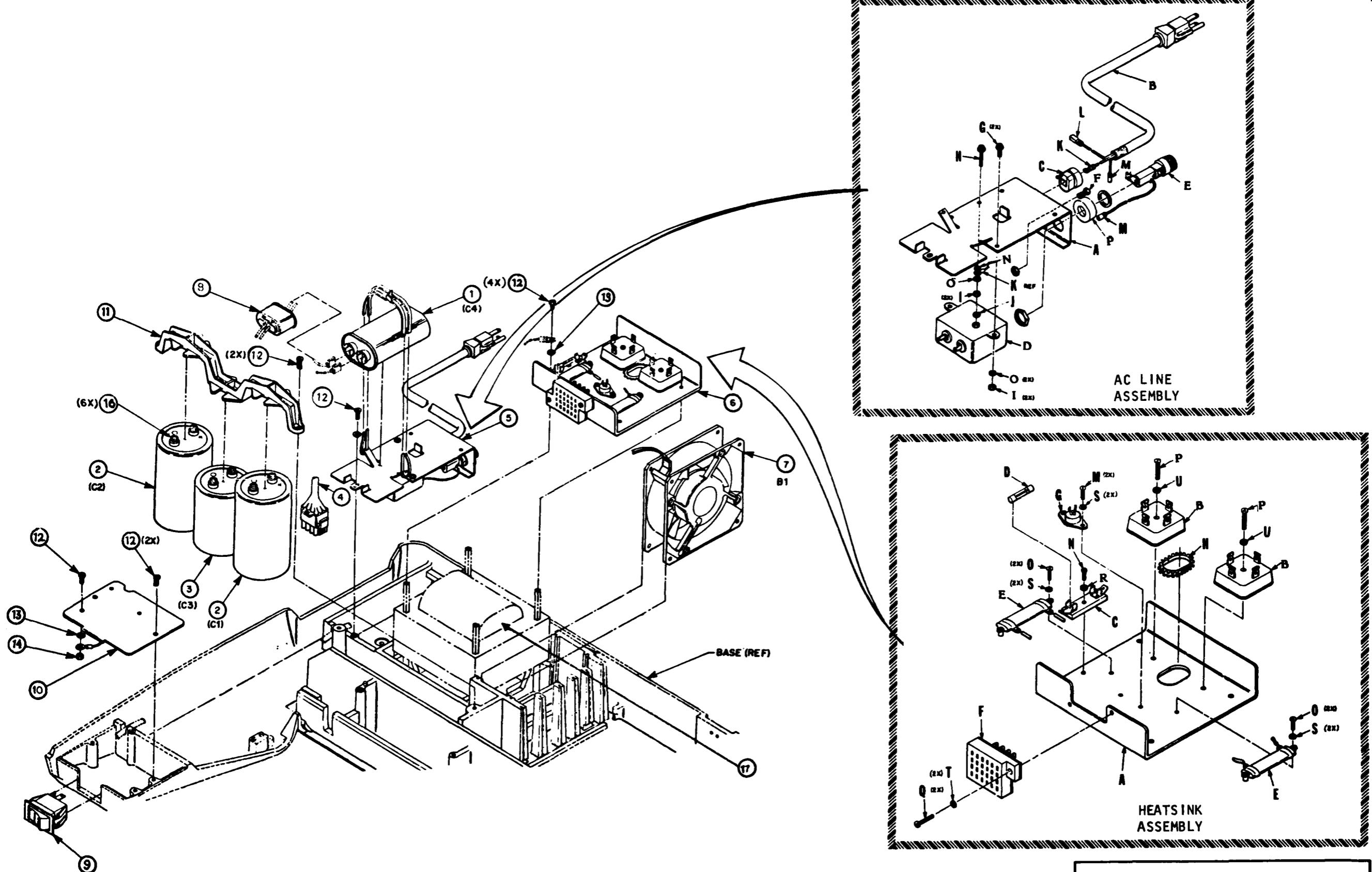


Figure 5-7. Power Supply Components
(Sheet 2 of 2)

TABLE 5-7. POWER SUPPLY COMPONENTS

Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-7	Power Supply Components			REF
1.	Capacitor, 3.00 F, 660V	C4	801944-003	1
2.	Capacitor, Aluminum Can, 68,000 F, 30V	C1,C2	800092-301	2
3.	Capacitor, Aluminum Can, 77,000 F, 15V	C3	800092-158	1
4.	Power Harness Assembly		249843-001	1
5.	AC Line Assembly		261894-001	1
5a.	Cover, AC Line		271960-001	1
5b.	Cord, AC Power		801627-001	1
5c.	Bushing, Strain Relief		800459-001	1
5d.	Filter, Line, 5 AMPS	L1	801930-001	1
5e.	Fuse Holder, Right Angle, 3AG		801652-001	1
5f.	Jack, Banana		800869-001	1
5g.	Screw, Hex Head, M4 x 8		815709-408	2
5h.	Screw, Hex Head, M4 x 20		815709-420	1
5i.	Nut, Hex, M4 x 0.7		801502-004	1
5j.	Washer, Split, M4, 7.3 Max OD		801505-004	1
5k.	Terminal, Ring Insulated, No. 10, 16-14GA		800170-108	1
5l.	Connector, Receptacle, Push-On, 16-14GA		801604-003	1
5m.	Connector, Wire Splice		800207-001	2
5n.	Washer, Lock, External Tooth, Size 4		801504-004	1

TABLE 5-7. POWER SUPPLY COMPONENTS (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
5o.	Washer, Flat, M4, 9mm Max OD		801503-004	3
5p.	Shield, Fuse Holder		261636-001	1
6.	Heat Sink Assembly		245891-001	1
6a.	Heat Sink, Transformer Rectifier		245804-001	1
6b.	Rectifier Assembly, Bridge, Full Wave, 25 AMP	CR1,CR2	801837-001	2
6c.	Fuse Block, 3AG		801995-001	1
6d.	Fuse, Slo Blo, 8ASB	F2	800917-080	1
6e.	Resistor, Power Assembly	R1,R2	245890-001	2
6f.	Block, Terminal	TB1	801955-003	1
6g.	Thermostat Assembly	S2	245894-001	1
6h.	Grommet, Caterpillar, Nylon		800402-003	1
6i.	Faston Flag Terminal		801967-001	3
6j.	Connector, Receptacle, Push-On, 16-14GA		801604-003	1
6k.	Connector, Receptacle, Push-On, 16-14GA		801604-004	3
6l.	Terminal, Ring Insulated, No. 10, 16-14GA		800170-108	1
6m.	Screw, Pan Head, M3x4mm		801500-304	2
6n.	Screw, Pan Head, M3x8mm		801500-308	1
6o.	Screw, Pan Head, M3x10mm		801500-310	4
6p.	Screw, Pan Head, M4x16mm		801500-416	2

TABLE 5-7. POWER SUPPLY COMPONENTS (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
6q.	Screw, Pan Head, M4x20mm		801500-420	2
6r.	Washer, Flat, M3, 7mm Max OD		801503-003	1
6s.	Washer, Lock, External Tooth, Size 3		801504-003	6
6t.	Washer, Lock, External Tooth, Size 4		801504-104	2
6u.	Washer, Lock, Split, M4, 7.3 Max OD		801505-004	2
7.	Fan Assembly	B1	245899-001	1
8.	Boot, Terminal		800670-001	1
9.	Switch, DPST, Power	S1	810137-001	1
10.	Cover, AC Switch		272063-001	1
11.	Clamp, Capacitor		245803-001	1
12.	Screw, Hex Head, M4x8		815709-408	10
13.	Washer, Lock, Size 4		801504-004	2
14.	Nut, Hex, M4x0.7mm		801502-004	1
15.	AC Harness Assembly		249826-001	1
16.	Screw, Hex Head, Slotted		815736-001	6
17.	Transformer Assembly*, Universal		249538-001	1
17a.	Block, Terminal	TB2	801955-002	1

* Not part of Power Supply Installation.

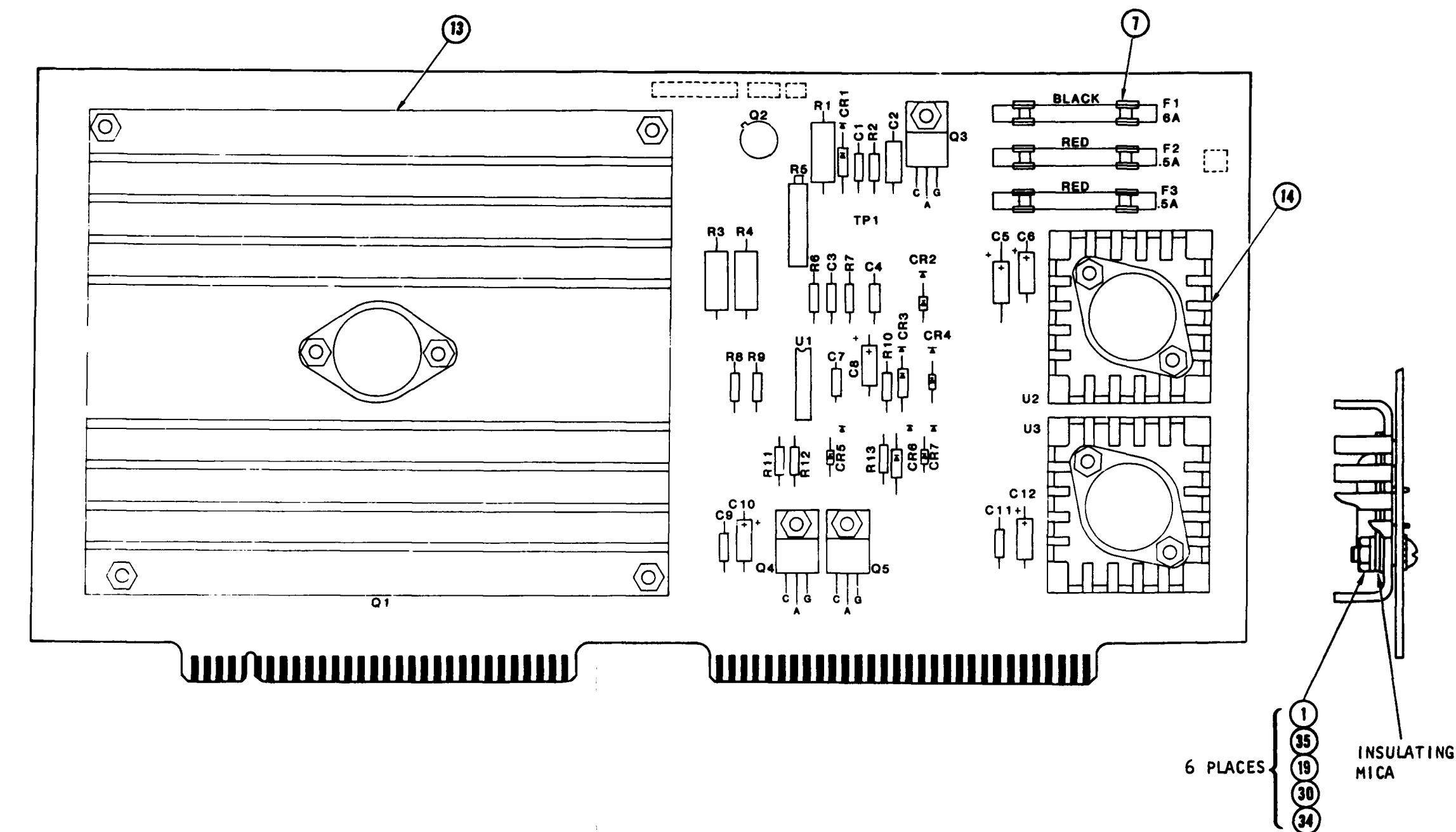


Figure 5-8. Regulator Circuit Card Assembly

TABLE 5-8. REGULATOR CIRCUIT CARD ASSEMBLY

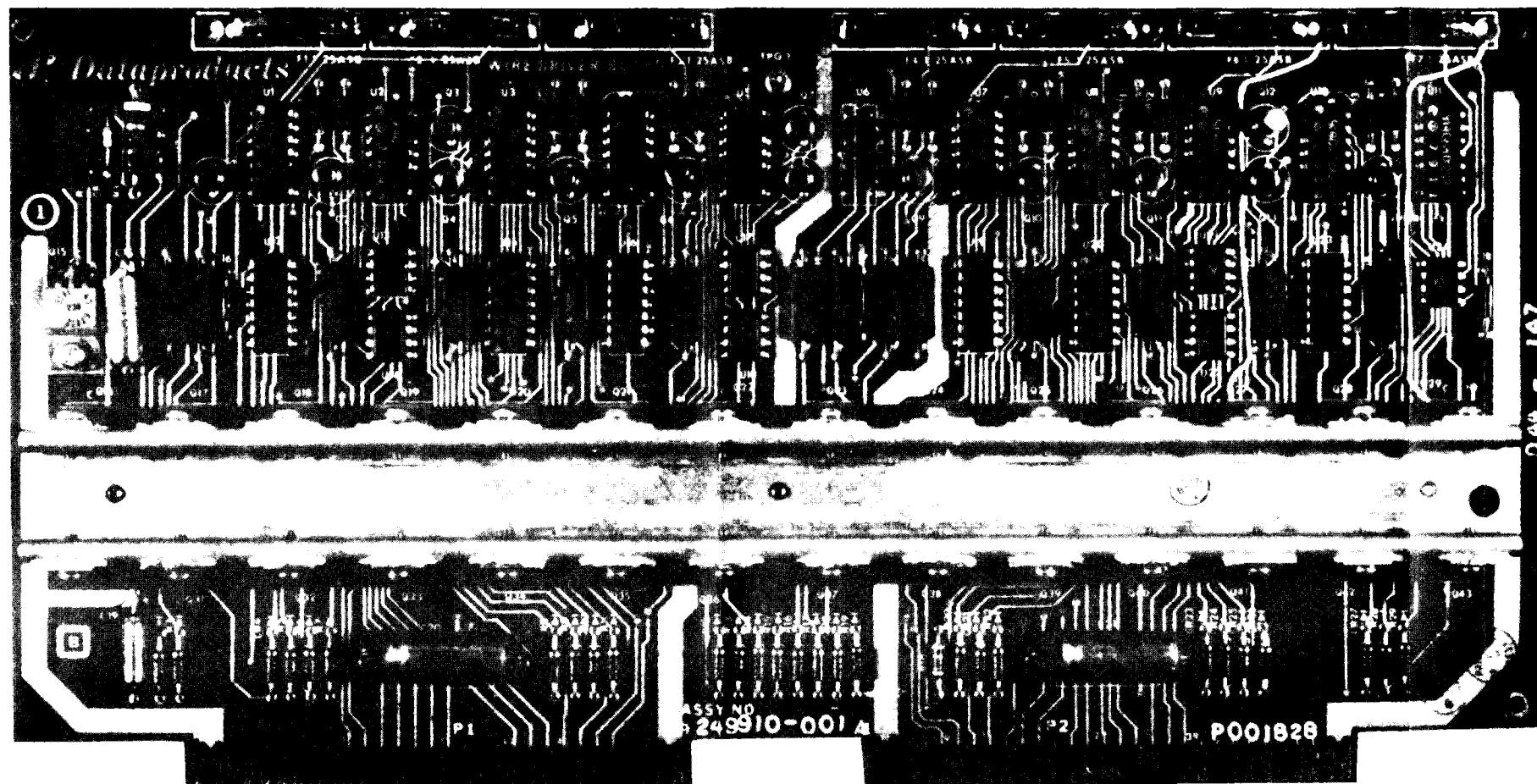
Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-8	Regulator Circuit Card Assembly		249785-001	REF
1.	Bushing, Insulation		800778-003	6
2.	Capacitor, Ceramic, 0.1 F, +80%-20%, 50V	C1,C3,C4, C9,C11	801929-001	5
3.	Capacitor, Tantalum, Polarized, 1 μ F, 10%, 50V	C2,C6,C8, C10	800090-105	4
4.	Capacitor, Tantalum, Polarized, 2.2 μ F, 10%, 50V	C5	800090-225	1
5.	Capacitor, 4700 pF, 100V	C7	800046-472	1
6.	Capacitor, Tantalum, Polarized, .33 μ F, 10%, 50V	C12	800090-334	1
7.	Clip, Fuse		800934-002	6
8.	Diode, Regulator, 6.2V, 5%, 500mW	CR1	801827-003	1
9.	Diode, Silicon, 200V, 1W, DPC104, D0-41	CR2,CR4, CR5,CR7	800095-001	4
10.	Diode, Regulator, 14V, 5%, 500mW	CR3,CR6	801827-005	2
11.	Fuse, Fast Acting 3AG, Glass, 6.0 AMPS	F1	800316-060	1
12.	Fuse, Fast Acting, 0.5 AMP	F2,F3	800316-005	2
13.	Heat Sink, Regulator		261587-001	1
14.	Heat Sink		800588-003	2
15.	Insulator, Semiconductor		815902-001	3
16.	Integrated Circuit, Precision Voltage Regulator	U1	801179-001	1

TABLE 5-8. REGULATOR CIRCUIT CARD ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
17.	Integrated Circuit, -12V Regulator	U2	801205-012	1
18.	Integrated Circuit, +12V Regulator	U3	801204-012	1
19.	Nut, Hex, M2.5mm		801502-025	6
20.	Rectifier, 50V, 8 AMP	Q3,Q4,Q5	801887-001	3
21.	Resistor, Film, 100 Ohms, 5%, 1W	R1	800032-101	1
22.	Resistor, Film, 100 Ohms, 5%, 1/4W	R2,R10,R13	800030-101	3
23.	Resistor, Fixed, Wire Wound, 0.1 Ohms, 1%, 3W	R3,R4	800084-091	2
24.	Resistor, Variable, Wire Wound, 1K, .52%, 1W	R5	800150-102	1
25.	Resistor, Fixed, 4.64K, 1%, 1/8W	R6	800011-327	1
26.	Resistor, Film, 10 Ohms, 5%, 1/4W	R7,R12	800030-100	2
27.	Resistor, Fixed, 1.54K, 1%, 1/8W	R8	800011-166	1
28.	Resistor, Film, 22 Ohms, 5%, 1/4W	R9	800030-220	1
29.	Resistor, Fixed, 1.33K, 1%, 1/8W	R11	800011-145	1
30.	Screw, Pan Head, X-Recessed, Steel, M2.5x14mm		801500-914	6
31.	Terminal, Turret, Swage	TP1	800155-002	1
32.	Transistor, NPN, 80V, 8 AMPS	Q1	801751-001	1

**TABLE 5-8. REGULATOR CIRCUIT CARD ASSEMBLY
(Contd)**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
33.	Transistor, NPN, 30V, Switching		815207-001	1
34.	Washer, Lock, Internal Tooth, M2.5mm	Q2	801504-126	6
35.	Washer, Split Lock, M3, 5.9mm Max OD		801505-003	6
36.	Washer, Flat Steel		801503-025	6



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Figure 5-9. M200/M120 Wire Driver
Circuit Card Assembly
(Sheet 1 of 2)

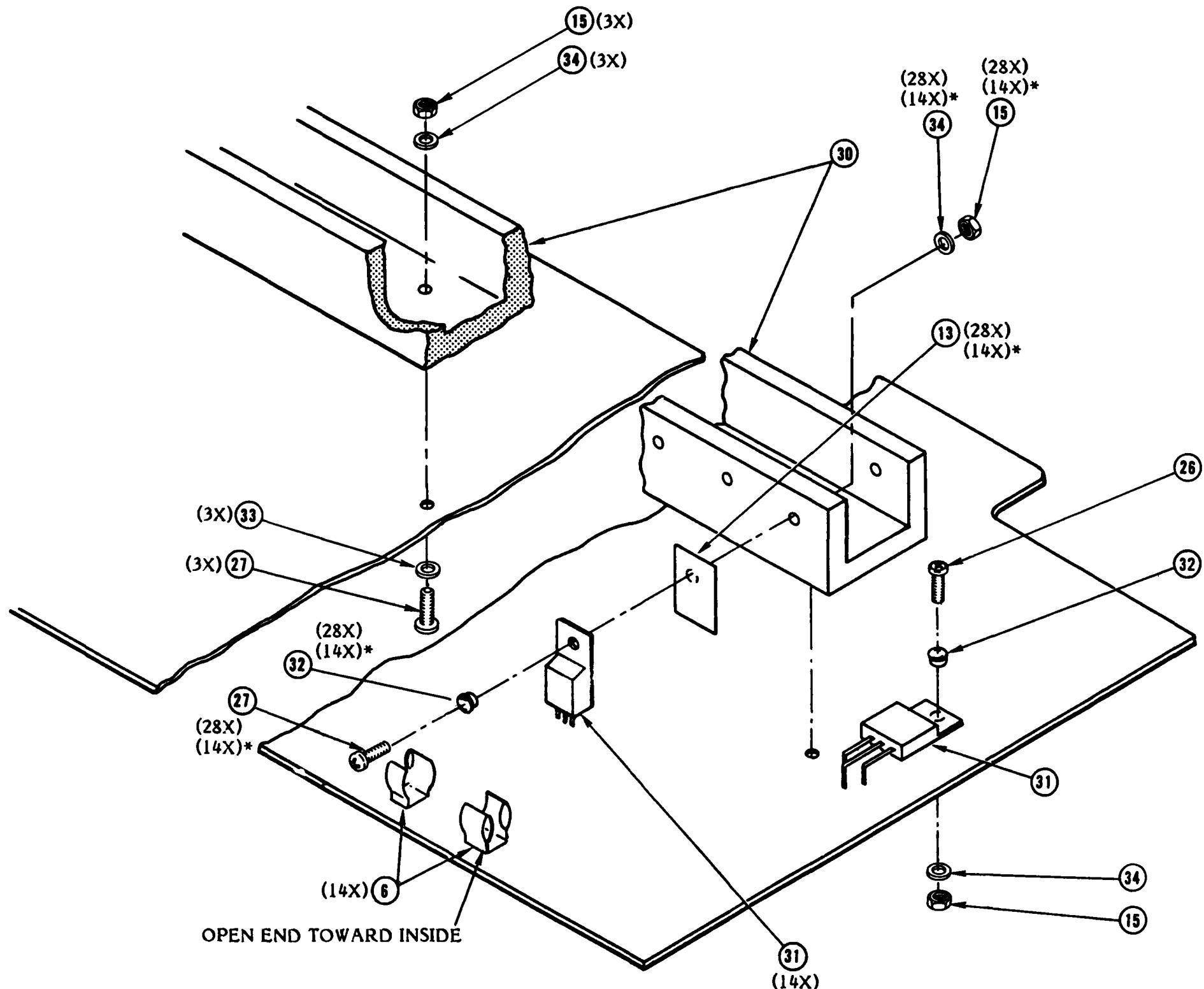


Figure 5-9.
M200/M120
Wire Driver Circuit Card
Assembly (Sheet 2 of 2)

TABLE 5-9. M120 WIRE DRIVER CIRCUIT CARD ASSEMBLY

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Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-9	Wire Driver Circuit Card Assembly		261715-001	REF
1.	Capacitor, 4700 pF, 100V	C1 - C7	800046-472	7
2.	Capacitor, Tantalum, Polarized, 22 μ F, 10%, 10V	C19	800040-226	1
3.	Capacitor, 50 μ F, 50V	C20,C21	801941-001	2
4.	Capacitor, Tantalum, Polarized, 10 μ F, 35V, 20%	C15	801942-001	1
5.	Capacitor, Ceramic, 0.1 F, +80%-20%, 50V	C16 - C18	801929-001	3
6.	Clip, Fuse, 5mm		801912-001	8
7.	Diode, IN5232B	CR1	800592-001	1
8.	Diode, Fast Recovery, 50V	CR2 - CR15	801831-001	14
9.	Fuse, Slo Blo, 1.25 AMP	F1 - F4	801906-125	4
10.	Heat Sink, Wire Driver		261588-001	1
11.	Integrated Circuit, Quad 2-Input NAND, Plastic, HI-Q, 7400	U12,U16,U19	800024-003	3
12.	Integrated Circuit, Dual Peripheral Drive, 75463	U13,U14,U17, U18	801798-001	4
13.	Insulator, Semiconductor Mica, T0220		815902-003	14
14.	Nut, Hex, Large Pattern, M3x0.5		801502-003	1
15.	Nut, Hex M2.5mm		801502-025	18
16.	Resistor, Film, 8.2K, 5%, 1/4W	R4	800030-822	1
17.	Resistor, Film, 270 Ohms, 5%, 1/4W	R2	800030-271	1

TABLE 5-9. M120 WIRE DRIVER CIRCUIT CARD ASSEMBLY
(Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
18.	Resistor, Film, 680 Ohms, 5%, 1W	R3	800032-681	1
19.	Resistor, Wire Wound, 1 Ohm, 1%, 3W	R5 - R11	800084-100	7
20.	Resistor, Network, 680 Ohms, .25W	U1,U5	801957-681	2
21.	Resistor, Network, 820 Ohms, .25W	U2	801957-821	1
22.	Resistor, Network, 1.5K, .25W	U3	801957-152	1
23.	Resistor, Network, 2.7K, .25W	U4,U15	801957-272	2
24.	Resistor, Variable, Wire Wound, 500 Ohms, .64%, 1W	R1	800150-501	1
25.	Resistor, Film, 4.7K, 5%, 1/4W	R19	800030-472	1
26.	Screw, Pan Head, X-Recessed, Steel, M3x8mm		801500-308	1
27.	Screw, Pan Head, X-Recessed, Steel, M2.5x10mm		801500-910	17
28.	Terminal, Turret, Swage, .093 Dia x .156 Ht	TP61	800155-002	1
29.	Transistor, NPN, 30V, 800mA, (2N2222)	Q1 - Q7	801830-001	7
30.	Transistor, NPN, Power, TIP 121	Q30 - Q36	801829-001	7
31.	Transistor, PNP, Power, TIP 126	Q15 - Q22	801828-001	8
32.	Washer, Insulating, Shoulder		815701-001	15
33.	Washer, Flat, Steel		801503-025	3

**TABLE 5-9. M120 WIRE DRIVER CIRCUIT CARD ASSEMBLY
(Contd)**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
34.	Washer, Lock, Internal Tooth M2.5		801504-126	21
35.	Washer, Split Lock, 5.9mm Max OD		801505-003	1

TABLE 5-9A. M200 WIRE DRIVER CIRCUIT CARD ASSEMBLY

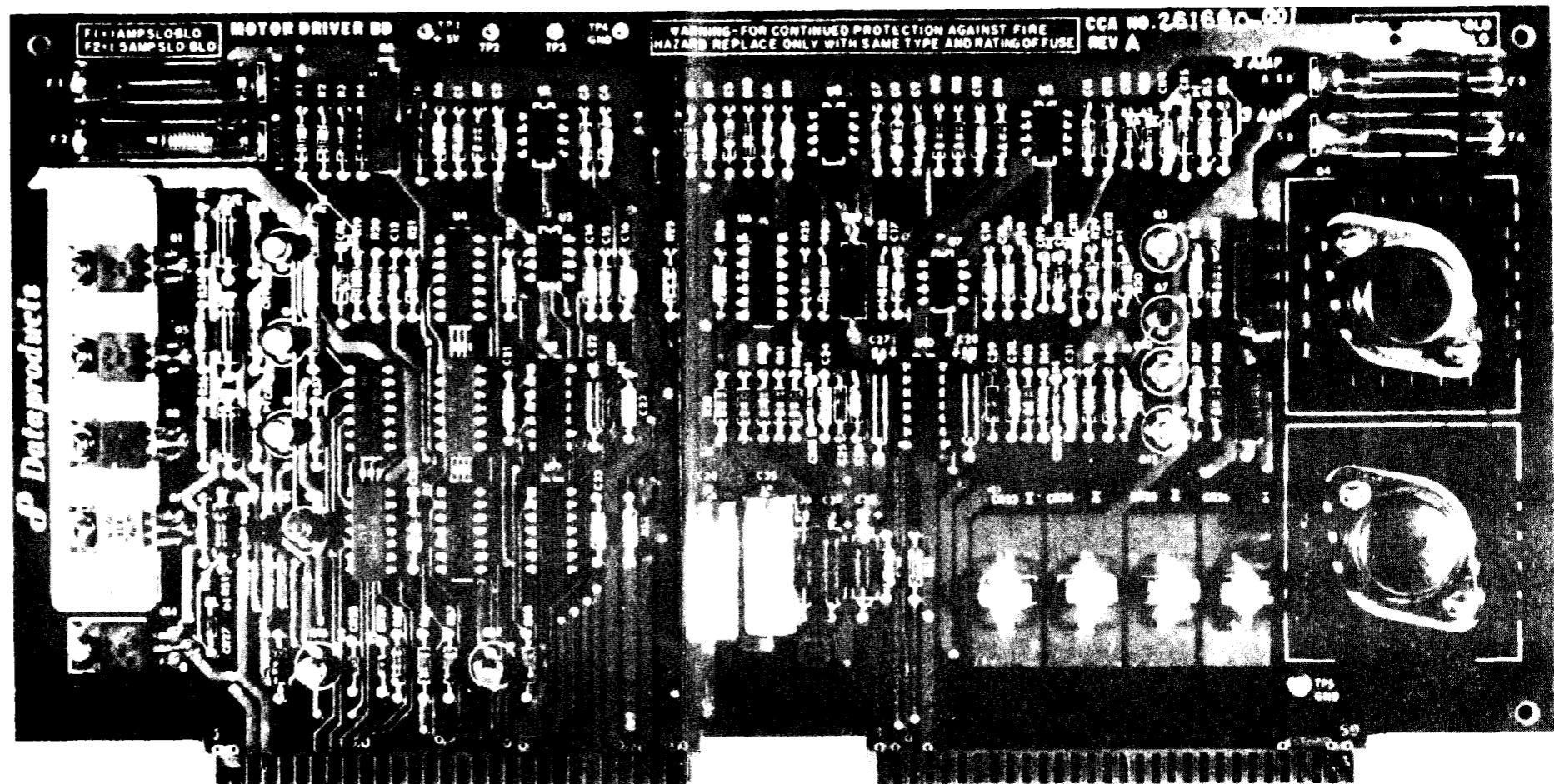
Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-9	Wire Driver Circuit Card Assembly		249910-001	REF
1.	Capacitor, 4700 pF, 100V	C1 - C14	800046-472	14
2.	Capacitor, Tantalum, Polarized, 22 μ F, 10%, 10V	C19	800040-226	1
3.	Capacitor, 50 μ F, 50V	C20,C21	801941-001	2
4.	Capacitor, Tantalum, Polarized, 10 μ F, 20%, 35V	C15	801942-001	1
5.	Capacitor, Ceramic, 0.1 μ F, +80%-20%, 50V	C16 - C18	801929-001	3
6.	Clip, Fuse, 5mm		801912-001	14
7.	Diode, IN5232B	CR1	800592-001	1
8.	Diode, Fast Recovery, 50V	CR2 - CR29	801831-001	28
9.	Fuse, Slo Blo, 1.25 AMP	F1 - F7	801906-125	7
10.	Heat Sink, Wire Driver		261588-001	1
11.	Integrated Circuit, Quad 2-Input NAND, Plastic, HI-Q, 7400	U12,U16,U19, U23	800024-003	4
12.	Integrated Circuit, Dual Peripheral Drive, 75463	U13,U14,U17, U18,U21,U22, U24	801798-001	7
13.	Insulator, Semiconductor Mica, T0220		815902-003	28
14.	Nut, Hex, Large Pattern, M3x0.5mm		801502-003	1
15.	Nut, Hex, M2.5mm		801502-025	32
16.	Resistor, Film, 8.2K, 5%, 1/4W	R4	800030-822	1

**TABLE 5-9A. M200 WIRE DRIVER CIRCUIT CARD ASSEMBLY
(Contd)**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
17.	Resistor, Film, 270 Ohms, 5%, 1/4W	R2	800030-271	1
18.	Resistor, Film, 680 Ohms, 5%, 1W	R3	800032-681	1
19.	Resistor, Wire Wound, 1 Ohm, 1%, 3W	R5 - R18	800084-100	14
20.	Resistor, Network, 680 Ohms, .25W	U1,U5,U7, U11	801957-681	4
21.	Resistor, Network, 820 Ohms, .25W	U2,U8	801957-821	2
22.	Resistor, Network, 1.5K, .25W	U3,U20	801957-152	2
23.	Resistor, Network, 2.7K, .25W	U4,U9,U10, U15	801957-272	4
24.	Resistor, Variable, Wire Wound, 500 Ohms, .64%, 1W	R1	800150-501	1
25.	Resistor, Film, 4.7K, 5%, 1/4W	R19	800030-472	1
26.	Screw, Pan Head, X-Recessed, Steel, M3x8mm		801500-308	1
27.	Screw, Pan Head, X-Recessed, Steel, M2.5x10mm		801500-910	31
28.	Terminal, Turret, Swage, .093 Dia x .156 Ht	TP61	800155-002	1
29.	Transistor, NPN, 30V, 800mA (2N2222)	Q1 - Q14	801830-001	14
30.	Transistor, NPN, Power, TIP 121	Q30 - Q43	801829-001	14
31.	Transistor, PNP, Power, TIP 126	Q15 - Q29	801828-001	15
32.	Washer, Insulating, Shoulder		815701-001	29

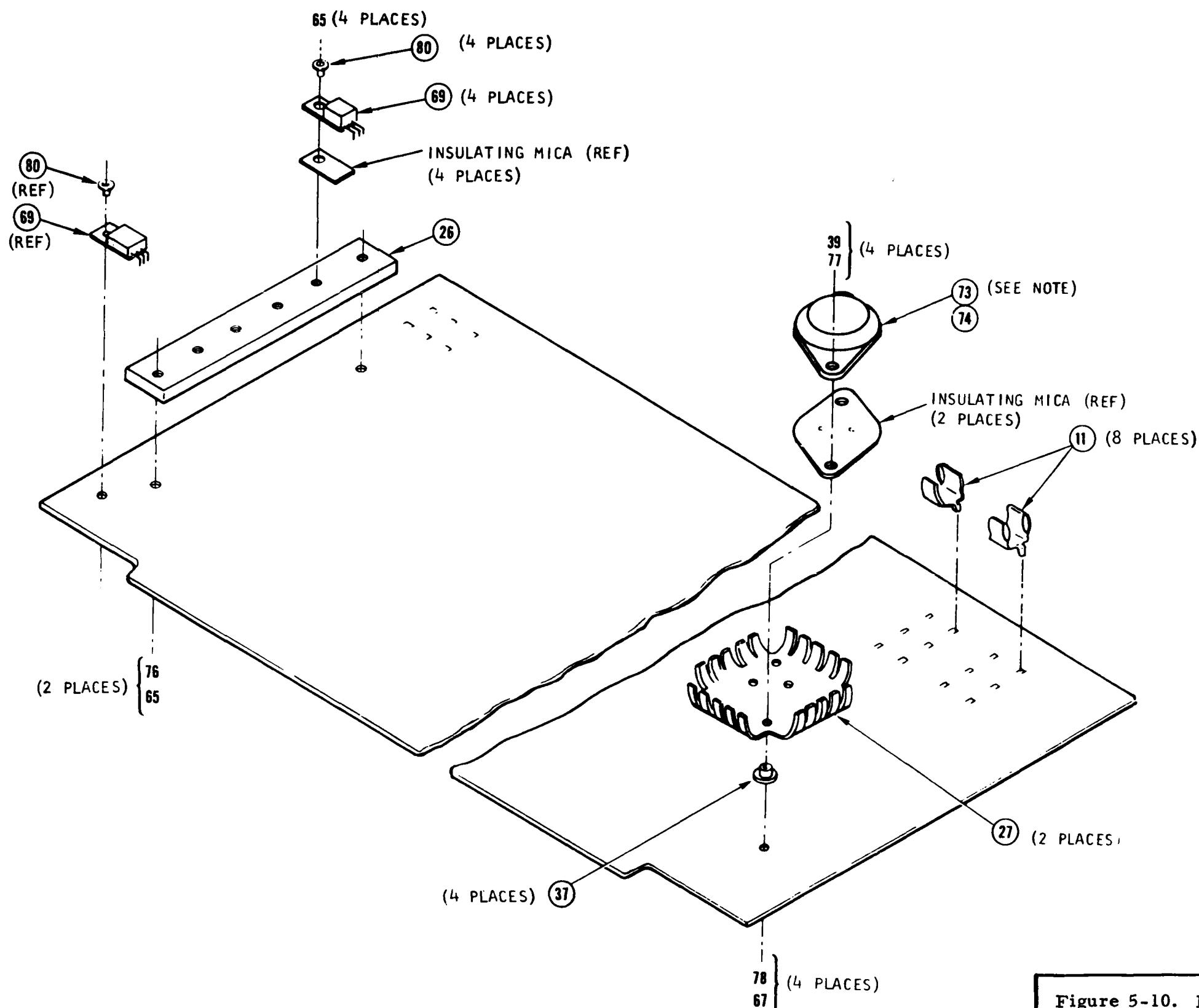
**TABLE 5-9A. M200 WIRE DRIVER CIRCUIT CARD ASSEMBLY
(Contd)**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
33.	Washer, Flat, Steel		801503-025	3
34.	Washer, Lock, Internal Tooth, M2.5		801504-126	35
35.	Washer, Split Lock, M3, 5.9mm Max OD		801505-003	1



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Figure 5-10.
Motor Driver Circuit Card
Assembly (Sheet 1 of 2)

**NOTE:**

ITEM 73 MOUNTED
LIKE ITEM 74.

Figure 5-10. Motor Driver
Circuit Card
Assembly
(Sheet 2 of 2)

TABLE 5-10. MOTOR DRIVER CIRCUIT CARD ASSEMBLY

Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 11-12	Motor Driver Circuit Card, Assembly		261660-001	REF
1.	Capacitor, Ceramic, .01 μ F, 10%, 100V	C1,C14,C33	800046-103	3
2.	Capacitor, Ceramic, 0.1 μ F, +80%-20%, 50V	C2,C4,C5, C8 - C10, C12,C15, C18 - C21, C24,C26,C30, C31,C39	801929-001	17
3.	Capacitor, Ceramic, 33 pF 10%, 100V	C3,C7,C11	800046-330	3
4.	Capacitor, Ceramic, 180 pF, 20%, 50V	C6	801311-181	1
5.	Capacitor, Ceramic, 1000 pF, 10%, 100V	C13,C17	800046-102	2
6.	Capacitor, Ceramic, .018 μ F, 10%, 100V	C16,C32	800046-183	2
7.	Capacitor, Tantalum, Polarized, 2.2 μ F, 10%, 20V	C22	800041-225	1
8.	Capacitor, Tantalum, Polarized, 10 μ F, 10%, 10V	C27,C28,C37	800040-106	3
9.	Capacitor, Aluminum, 50 μ F, 50V	C34,C35	801941-001	2
10.	Capacitor, Tantalum, Polarized, 10 μ F, 10%, 20V	C36,C38	800041-106	2
11.	Clip, Fuse		800934-002	8
12.	Diode, Voltage Regulator, 9V, IN935	CR1	801832-001	1

TABLE 5-10. MOTOR DRIVER CIRCUIT CARD ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
13.	Diode, Silicon, DPC-123	CR2,CR3, CR9,CR10, CR18,CR19, CR27-CR29	800743-001	9
14.	Diode, IN5235B	CR4	800592-001	1
15.	Diode, Regulator, 5%, 6.8V, 500mW	CR5	801827-004	1
16.	Diode, Voltage Regulator	CR6,CR13, CR15	801835-001	3
17.	Diode, Silicon, 200V, 1W, DPC104, DO-41	CR7,CR14, CR16,CR21	800095-001	4
18.	Diode, Rectifier, 90mA, 80mW	CR8,CR20	801834-001	2
19.	Diode, Voltage Regulator, 3.3V, 500mW	CR11	800602-001	1
20.	Diode, Regulator, 5%, 2.4V, 500mW	CR12	801827-001	1
21.	Diode, Rectifier, Fast Recovery, 100V, 3A	CR22	801769-001	1
22.	Diode, Power, Fast Recovery, 5 AMPS	CR23 - CR26	815203-001	4
23.	Fuse, Slow-Acting, Glass, 3AG, 1 AMP	F1	800917-010	1
24.	Fuse, Slow-Acting, Glass, 3AG, 1.5 Amps	F2	800917-026	1
25.	Fuse, Slo-Acting, 3AG, Glass, 3 AMPS	F3,F4	800917-030	2
26.	Heat Sink, Paper Motion		245886-001	1
27.	Heat Sink		800588-003	2
28.	Integrated Circuit, Quad, 2-Input Position AND Gates	U4,U11	801807-003	2

TABLE 5-10. MOTOR DRIVER CIRCUIT CARD ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
29.	Integrated Circuit, 555 Timer Circuit	U5	801808-001	1
30.	Integrated Circuit, Dual SPST, Analog FET Switches	U6	8018719-001	1
31.	Integrated Circuit, Quad 2-Input Position NOR Gates	U8	801838-003	1
32.	Integrated Circuit, Re-triggerable Monostable	U9	801836-003	1
33.	Integrated Circuit, Quad V-Compound/Buffer, DPC339N, TO-116	U10	801257-001	1
34.	Integrated Circuit, 2-Input NAND, Plastic, HI-Q, 7400	U12	800024-003	1
35.	Integrated Circuit, Operational Amplifier	U1 - U3, U7	801806-001	4
36.	Insulator, Semiconductor, TO-3		815902-001	2
37.	Insulator, Semiconductor, TO-220		815902-003	4
38.	Nut, Hex, Large Pattern, M3x0.5		801502-003	4
39.	Nut, Hex, M2.5		801502-025	1
40.	Resistor, Fixed, 10K, 1%, 1/8W	R1,R2	800011-104	2
41.	Resistor, Fixed, 1K, 1%, 1/8W	R3,R19,R26, R28	800011-103	4
42.	Resistor, Film, 100 Ohms, 5%, 1/4W	R4,R32,R48	800030-101	3
43.	Resistor, Variable, Wire Wound, 200 Ohms, .72%, 1W	R5	800150-201	1
44.	Resistor, Film, 220K, 5%, 1/4W	R6,R9,R11	800030-224	3

TABLE 5-10. MOTOR DRIVER CIRCUIT CARD ASSEMBLY (Contd)

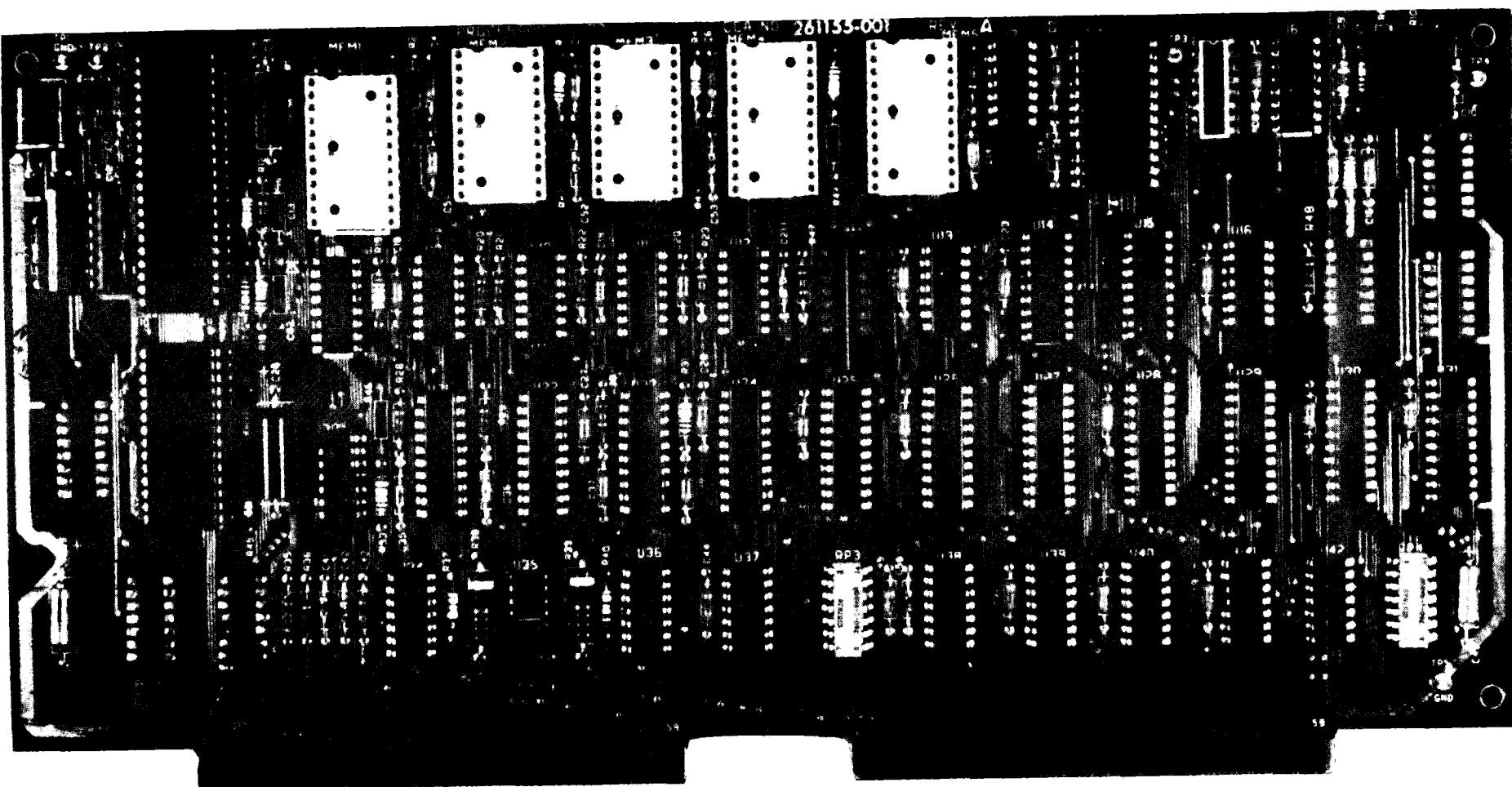
Figure & Index No.	Description	Reference Designator	Part No.	Qty
45.	Resistor, Film, 5.1K, 5%, 1/4W	R7	800030-512	1
46.	Resistor, Film, 100K, 5%, 1/4W	R8,R43	800030-104	2
47.	Resistor, 680K, 5%, .25W	R10	800553-684	1
48.	Resistor, Film, 10K, 5%, 1/4W	R12 - R14, R39,R41, R42,R54	800030-103	7
49.	Resistor, Film, 330 Ohms, 5%, 1/4W	R15 - R18,R31, R34 - R37, R47,R50	800030-331	11
50.	Resistor, Fixed, -1.54K, 1%, 1/8W	R20,R45	800011-166	2
51.	Resistor, Film, 220 Ohms, 5%, 1/4W	R21	800030-221	1
52.	Resistor, Fixed, 7.15K, 1%, 1/8W	R22	800011-390	1
53.	Resistor, Film, 3.3K, 5%, 1/4W	R23,R24,R55	800030-332	3
54.	Resistor, Film, 12K Ohms, 5%, 1/4W	R25	800030-123	1
55.	Resistor, Fixed, Wire Wound, 0.1 Ohms, 1%, 3W	R27,R33,R49	800084-091	3
56.	Resistor, Film, 470 Ohms, 5%, 1/4W	R29,R30, R56,R57	800030-471	4
57.	Resistor, Film, 7.5K, 5%, 1/4W	R38	800030-752	1
58.	Resistor, Film, 39K, 5%, 1/4W	R40	800030-393	1
59.	Resistor, Film, 68 Ohms, 5%, 1/4W	R44,R46	800030-680	2
60.	Resistor, Film, 1.2K, 5%, 1/2W	R51	800031-122	1
61.	Resistor, Film, 27K, 5%, 1/4W	R52	800030-273	1
62.	Resistor, Film, 150 Ohms, 5%, 1/4W	R53	800030-151	1
63.	Resistor, Film, 6.8K, 5%, 1/4W	R58	800030-682	1

TABLE 5-10. MOTOR DRIVER CIRCUIT CARD ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
64.	Resistor, Network, 7.5K, PU	RP1,RP2	801006-752	2
65.	Screw, Pan Head, X-Recessed, Steel, M2.5x6mm		801500-906	6
66.	Screw, Pan Head, X-Recessed, Steel, M2.5x8mm		801500-908	1
67.	Screw, Pan Head, X-Recessed, Steel, M3x14mm		801500-314	4
68.	Terminal, Turret, Swage, .093 Dia x .156 Ht	TP1 - TP5	800155-002	5
69.	Transistor, NPN, Power, TIP 121	Q1,Q5,Q8, Q14	801829-001	4
70.	Transistor, Silicon, PNP, without Spacer	Q2,Q3,Q6, Q9,Q13	815200-002	5
71.	Transistor, PNP, 80V, 8A, 2N6051	Q4	801752-001	1
72.	Transistor, NPN, 30V, 800mA (2N2222)	Q7,Q10,Q12, Q16,Q17	801830-001	5
73.	Transistor, PNP, Power, TIP 126	Q11	801828-001	1
74.	Transistor, NPN, 80V, 8A, 2N6058	Q15	801751-001	1
75.	Washer, Flat, Steel, M3, 10mm Max OD		801503-103	4
76.	Washer, Lock, Internal Tooth, M2.5		801504-126	3
77.	Washer, Split Lock, M3, 5.9mm Max OD		801505-003	8
78.	Washer, Lock, External Tooth, M3		801504-003	4
79.	Washer, Flat, Steel, M3, 7mm Max OD		801503-003	4

TABLE 5-10. MOTOR DRIVER CIRCUIT CARD ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
80.	Washer, Insulating, Shoulder		815701-001	5
81.	Wire, Solid, Insulated, Green, 30 AWG	W1	800068-530	50 mm
82.	Wire, Jumper, Solid, Insulated, 24 AWG	W2	800688-003	1



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Figure 5-11. Processor Circuit Card Assembly

TABLE 5-11. PROCESSOR CIRCUIT CARD ASSEMBLY

Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-11	Processor Circuit Card Assembly		261155-001	REF
1.	Capacitor, 10 pF, 100V	C1	800046-100	1
2.	Capacitor, Ceramic, 0.1μF, +80%-20%, 50V	C2,C4 - C8, C14 - C16, C18 - C20, C22 - C25, C27 - C33, C37,C38, C43 - C48,C51	801929-001	32
3.	Capacitor, Tantalum, Polarized, 10μF, 10%, 10V	C3	800040-106	1
4.	Capacitor, Ceramic, 0.1μF, 50V	C9,C10	801959-105	2
5.	Capacitor, Ceramic, 1000 pF, 20%, 50V	C12,C17,C21, C35,C36,C41, C42,C52 - C56	801311-102	12
6.	Capacitor, Tantalum, Polarized, 22μF, 10%, 20V	C26	800041-226	1
7.	Capacitor, Tantalum, Polarized, 22μF, 10%, 10V	C39,C49	800040-226	2
8.	Crystal, 18.432 mHz	Y1	801739-001	1
9.	Diode, Regulator, 5.1V, 5%, 500 mW	CR1	801827-002	1
10.	Integrated Circuit, Clock Generator and Driver	U1	801803-001	1
11.	Integrated Circuit, 8-Bit N-Channel Microprocessor	U2	801804-001	1
12.	Integrated Circuit, LS Hex Inverter, 74LS04, TO-116	U3,U13,U38, U39,U40	801529-003	5
13.	Integrated Circuit, Demultiplex, 74154, 24L DIP HI-Q	U4	801180-003	1

TABLE 5-11. PROCESSOR CIRCUIT CARD ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
14.	Integrated Circuit, Dual Mono-stable, 74221	U6	801023-003	1
15.	Integrated Circuit, 3 to 8-Line Decoder Demultiplex, 74LS138	U8	801585-003	1
16.	Integrated Circuit, LS Quad 2-Input NAND Gate, 74LS00, TO-116	U9	801528-003	1
17.	Integrated Circuit, LS Hex Inverter, 74LS14	U10	801533-003	1
18.	Integrated Circuit, Dual D-Type Flip-Flop, DPC7474	U11,U12	800400-003	2
19.	Integrated Circuit, Memory RAM, P2114L	U14,U15	801614-001	2
20.	Integrated Circuit, Quad 2-Input AND Gate, 74LS08	U16,U20	801530-003	2
21.	Integrated Circuit, System Controller and Bus Driver	U19	801802-001	1
22.	Integrated Circuit, Octal Buffer/Driver, 20L DIP, 74LS244	U21,U26,U31	801716-003	3
23.	Integrated Circuit, Octal D Flip-Flop, 3-State, 74LS374	U22	801723-003	1
24.	Integrated Circuit, LS Octal D Flip-Flop, 74LS273, 20L DIP	U23,U24,U25, U29,U30	801550-001	5
25.	Integrated Circuit, 8 Bit Bidirectional Transceiver, 8304	U27,U28	801805-001	2
26.	Integrated Circuit, Quad 2-Input Position, 74LS132	U34	801800-003	1
27.	Integrated Circuit, Dual Peripheral OR Driver, Plastic Package	U35	801798-003	1
28.	Integrated Circuit, Quad 2-Input NOR Gate	U36,U37,U41, U42	801584-003	4

TABLE 5-11. PROCESSOR CIRCUIT CARD ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
29.	Resistor, Film, 680 Ohms, 5%, 1/4W	R1	800030-681	1
30.	Resistor, Film, 1K, 5%, 1/4W	R3,R5,R7, R9,R14,R17, R19,R27,R31, R33	800030-102	10
31.	Resistor, Film, 68 Ohms, 5%, 1/4W	R6	800030-680	1
32.	Resistor, Variable, Wire Wound, 10K, .24%, 1W	R8,R10	800150-103	2
33.	Resistor, Film, 7.5K, 5%, 1/4W	R12,R20,R21, R22,R28,R29, R30,R35,R36	800030-752	9
34.	Resistor, Film, 15 Ohms, 5%, 1/4W	R4,R41	800030-150	2
35.	Resistor, Film, 10K, 5%, 1/4W	R18	800030-103	1
36.	Resistor, Film, 220 Ohms, 5%, 1/4W	R23	800030-221	1
37.	Resistor, Film, 4.7K, 5%, 1/4W	R47,R48	800030-472	2
38.	Resistor, Film, 1.8K, 5%, 1/4W	R37,R40	800030-182	2
39.	Resistor, Film, 120 Ohms, 5%, 1W	R38,R39	800032-121	2
40.	Resistor, Film, 100 Ohms, 5%, 1/4W	R45	800030-101	1
41.	Resistor, Network, Pullup, 680 Ohms, 5%, .125W	RP3,RP4	801006-681	2
42.	Socket, Integrated Circuit, 28 Pin DIP	XU19	801864-003	1
43.	Socket, Integrated Circuit, 24 Pin DIP	XM1 - XM5	801864-002	5
44.	Socket, Integrated Circuit, 40 Pin DIP	XU2	801864-004	1

TABLE 5-11. PROCESSOR CIRCUIT CARD ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
45.	Socket, Integrated Circuit	XU	801864-001	1
46.	Terminal, Turret, Swage, .093 Dia x .156H	TP1-TP5	800155-002	5

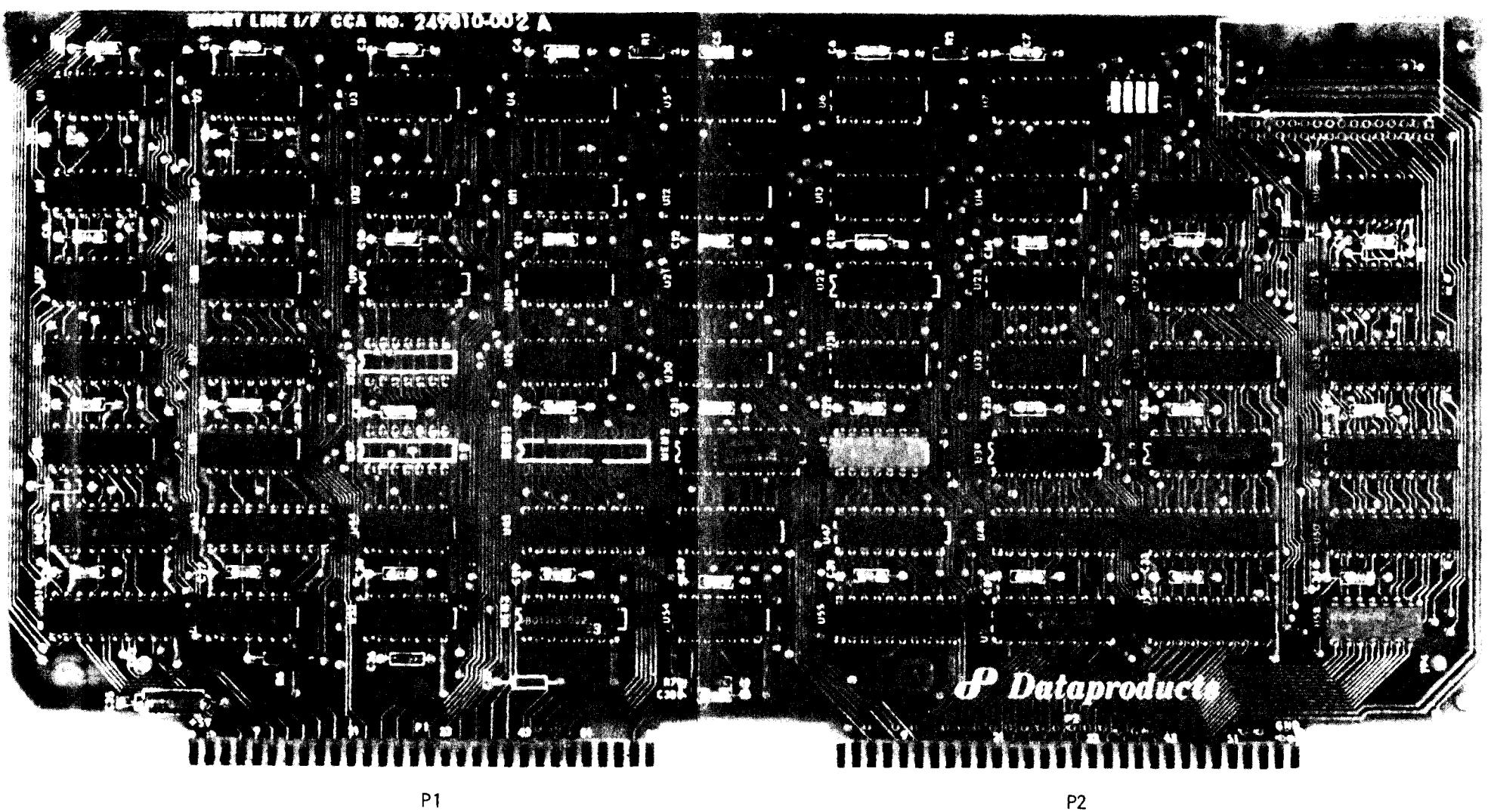


Figure 5-12. DPC Short Line Parallel Interface CCA

TABLE 5-12. DPC SHORT-LINE PARALLEL INTERFACE CIRCUIT CARD ASSEMBLY

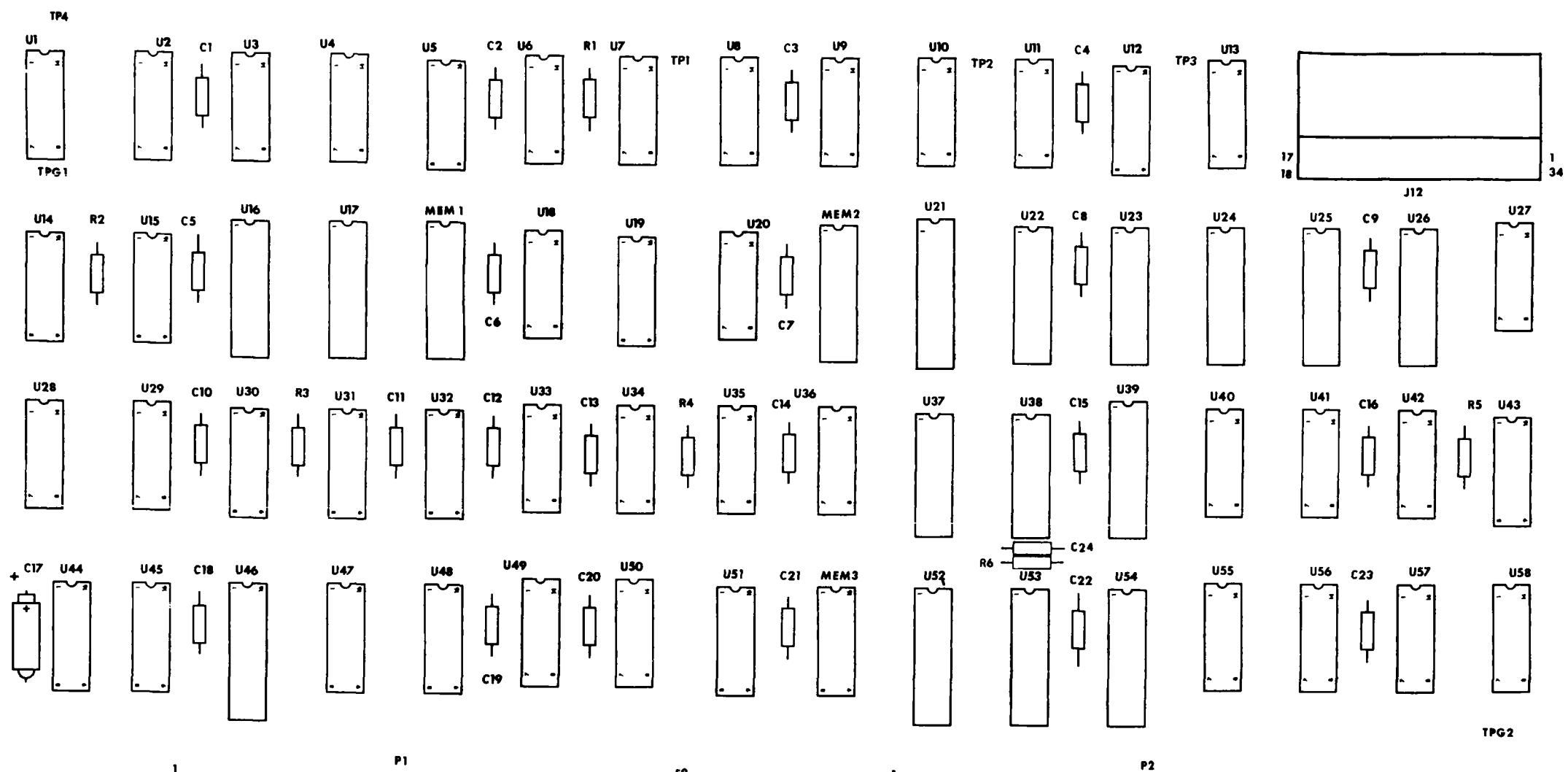
Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-12	DPC Short-Line Parallel Interface Circuit Card Assembly	A2	249810-002	REF
1.	Capacitor, Ceramic, $0.1\mu F$, +80% - 20%, 50V	C1 - C34, C38	801929-001	35
2.	Capacitor, Tantalum, Polarized $22\mu F$, 10%, 10V	C35	800040-226	1
3.	Capacitor, Ceramic, 1000 pF, 20%, 50V	C36	801311-102	1
4.	Connector, Printed Circuit Board, 34-Position, Header (Option) (Used with TCVFU only)	J12	801737-034	1
5.	Integrated Circuit, PROM, Programmed, 512×8	MEM1	261200-001	1
6.	Integrated Circuit, PROM, Programmed, 512×8	MEM2	801913-002	1
7.	Resistor, Film, 4.7K Ohms, 5%, 1/4W	R1 - R5	800030-472	5
8.	Resistor, Film, 100 Ohms, 5%, 1/4W	R6	800030-101	1
9.	Resistor, Film, 10K Ohms, 5%, 1W	R7	800030-103	1
10.	Terminal, Turret, Swage, 0.093 Dia X 0.156 High	TP1 - TP4	800155-002	4
11.	Integrated Circuit, Quad 2-Input Exclusive-OR Gates, 74LS86	U20,U25	801759-003	2
12.	Integrated Circuit, Dual D-Type Flip-Flops with Preset and Clear, 74LS74	U2,U6,U10, U26	801540-003	4

TABLE 5-12. DPC SHORT-LINE PARALLEL INTERFACE CIRCUIT CARD ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
13.	Integrated Circuit, Quad 2-Input Positive OR Gates, 74LS32	U3,U12,U18	801536-003	3
14.	Integrated Circuit, Quad 2-Input Positive AND Gates, 74LS08	U4,U13,U32	801530-003	3
15.	Integrated Circuit, Dual J-K Flip-Flops with Preset and Clear, 74LS112	U5,U7,U9, U15,U27,U35	801813-003	6
16.	Integrated Circuit, Quad 2-Input Positive NAND Gates, 74LS00	U8,U11,U21, U53	801528-003	4
17.	Integrated Circuit, Hex Inverters, 74LS04	U14,U17,U52	801529-003	3
18.	Integrated Circuit, Octal D-Type Latches, 74LS373	U43	801961-003	1
19.	Integrated Circuit, Inverted Tri-State Octal Buffers, Line Drivers, Line Receivers, 74LS240	U40,U42,U56	801691-003	3
20.	Integrated Circuit, Resistor Network, 7.5K Ohms	U38,U58	801006-752	2
21.	Integrated Circuit, Hex Bus Drivers, 74LS366	U46	801811-003	1
22.	Integrated Circuit, 9-Bit Odd/Even Parity Generator, 74LS280	U44	801814-003	1
23.	Integrated Circuit, Octal Buffers/Line Drivers/Line Receivers, 74LS244	U34,U41,U45, U48,U50,U51, U55	801716-003	7
24.	Integrated Circuit, 8-Bit Bidirectional Transceiver, 8304	U49,U57	801805-001	2

**TABLE 5-12. DPC SHORT-LINE PARALLEL INTERFACE
CIRCUIT CARD ASSEMBLY (Contd)**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
25.	Integrated Circuit, Dual 4-Input Positive NAND Gates, 74LS20	U1	801534-003	1
26.	Integrated Circuit, 4-Bit Bistable Latches, 74LS75	U19	801541-003	1
27.	Integrated Circuit, Hex Schmitt Trigger Inverters, 74LS14	U29	801533-003	1
28.	Integrated Circuit, Dual 4-Bit Binary Counters, 74LS393	U54	801694-003	1
29.	Integrated Circuit, Line Buffer, 1K x 8 RAM, P2114L	U39,U47	801614-001	2
30.	Integrated Circuit, Quad Bus Buffer Gates, 74LS125	U23	801812-003	1
31.	Integrated Circuit, Resistor Network, 390 Ohms	U28,U37	801006-391	2
32.	Integrated Circuit, 3-to-8 Line Decoders, 74LS138	U22	801585-003	2
33.	Integrated Circuit, Octal D-Type Flip-Flops, 74LS273	U33	801550-003	1
34.	Integrated Circuit, Triple 3-Input Positive AND Gates, 74LS11	U24	801532-003	1
35.	Integrated Circuit, Quad 2-Input NOR Gate	U16	801584-003	1
36.	Integrated Circuit, Hex Schmitt Trigger, 7414	U30,U31,U36	800959-001	3
37.	Integrated Circuit, Octal D-Type Flip-Flop, 74LS273	U33	801550-003	1
38.	Switch, Rocker, 4-Position, SPST	S1	801115-004	1

**NOTE:**

THIS ILLUSTRATION DEPICTS THE TYPICAL
CIRCUIT CARD ASSEMBLY CONFIGURATION.
COMPONENT PLACEMENT MAY VARY AS A
FUNCTION OF DESIGN.

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Figure 5-13. DPC Long-Line Parallel Interface Circuit Card Assembly (Option)

TABLE 5-13. DPC LONG-LINE PARALLEL INTERFACE CIRCUIT CARD ASSEMBLY (OPTION)

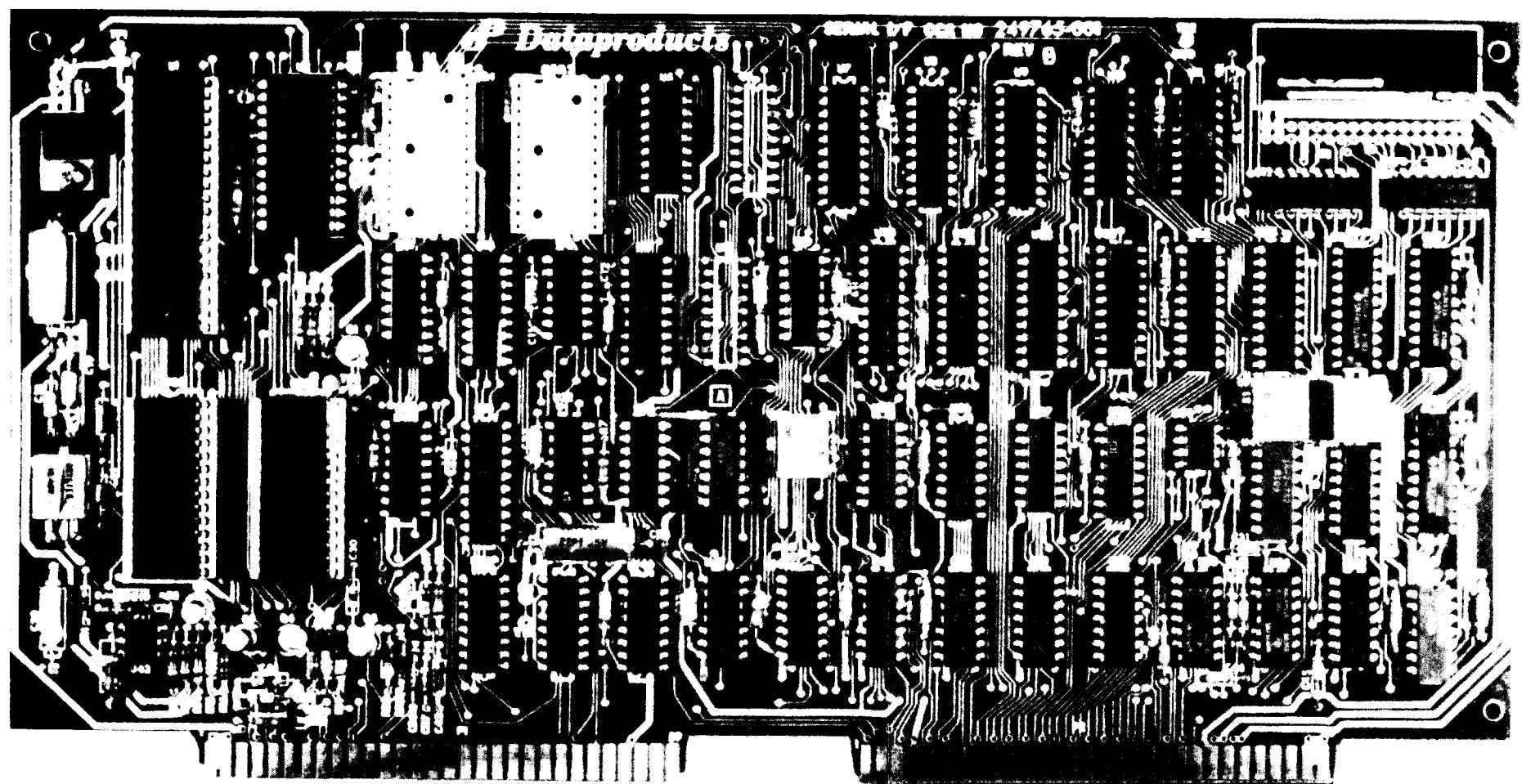
Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-13	DPC Long-Line Parallel Interface Circuit Card Assembly (Option)	A2	245785-001	REF
1.	Capacitor, Ceramic, $0.1\mu F$, +80% -20%, 50V	C1 - C12, C14 - C16, C18 - C24	801929-001	22
2.	Capacitor, Ceramic, 1000 pF, 20%, 50V	C13	801311-102	1
3.	Capacitor, Tantalum, Polarized, $22\mu F$, 10%, 10V	C17	800040-226	1
4.	Connector, Printer Circuit Board, 34-Position, Header (Option) (Used with TCVFU only)	J12	801737-034	1
5.	Integrated Circuit, PROM, 256×8 , 74S471	MEM1	801914-002	1
6.	Integrated Circuit, PROM, 74LS244	MEM3	801913-002	1
7.	Resistor, Film, 4.7K Ohms, 5%, 1/4W	R1 - R3,R5	800030-472	4
8.	Resistor, Film, 100 Ohms, 5%, 1/4W	R4	800030-101	1
9.	Resistor, Film, 10K Ohms, 5%, 1/4W	R6	800030-103	1
10.	Terminal, Turret, Swage, 0.093 Dia x 0.156 High	TP1 - TP4, TPG1,TPG2	800155-002	6
11.	Integrated Circuit, Quad 2-Input Exclusive OR Gates, 74LS86	U1,U33	801759-003	2
12.	Integrated Circuit Dual D-Type with Preset and Clear, 74LS74	U2,U6,U11, U13	801540-003	4
13.	Integrated Circuit, Quad 2-Input Positive OR Gates, 74LS32	U3,U7,U10, U57	801536-003	4
14.	Integrated Circuit, Quad 2-Input Positive AND Gates, 74LS08	U4,U58	801530-003	2

TABLE 5-13. DPC LONG-LINE PARALLEL INTERFACE CIRCUIT CARD ASSEMBLY (OPTION) (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
15.	Integrated Circuit, Dual J-K Flip-Flops with Preset and Clear, 74LS112	U5,U12,U14, U15,U43	801813-003	5
16.	Integrated Circuit, Quad 2-Input Positive NAND Gates, 74LS00	U8,U28,U29, U35,U41	801528-003	5
17.	Integrated Circuit, Hex Inverters, 74LS04	U9,U34,U55	801529-003	3
18.	Integrated Circuit, Octal D-type Latches, 74LS373	U16	801961-003	1
19.	Integrated Circuit, Octal Buffers/Line Drivers/Line Receivers, 74LS244	U17,U21,U22, U24 - U26,U52	801716-003	7
20.	Integrated Circuit, Resistor Network, 7.5K Ohms	U18,U40	801006-752	2
21.	Integrated Circuit, Hex Bus Drivers, 74LS366	U19	801811-003	1
22.	Integrated Circuit, 9-Bit Odd/Even Parity Generator	U20	801814-003	1
23.	Integrated Circuit, 8-Bit Bi-directional Bus Transceiver, 8304	U23	801805-001	1
24.	Integrated Circuit, Dual 4-Input Positive NAND Gates, 74LS20	U27	801534-003	1
25.	Integrated Circuit, 4-Bit Bi-stable Latches, 74LS75	U30	801541-003	1
26.	Integrated Circuit, Quad Differential Line Receivers, 26LS32	U31,U32,U48	801966-003	3
27.	Integrated Circuit, Dual 4-Bit Binary Counters, 74LS393	U36	801694-003	1

**TABLE 5-13. DPC LONG-LINE PARALLEL INTERFACE
CIRCUIT CARD ASSEMBLY (OPTION) (Contd)**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
28.	Integrated Circuit, Line Buffer, 1K x 8 RAM, P2114L	U37,U38	801614-001	2
29.	Integrated Circuit, Inverted Tri-State Octal Buffers, Line Drivers, Line Receivers, 74LS240	U39,U46,U53	801691-003	3
30.	Integrated Circuit, Quad Bus Gates, 74LS125	U42	801812-003	1
31.	Integrated Circuit, Quad Differential Line Drivers, 26LS31	U45,U47	801965-003	2
32.	Integrated Circuit, Hex Schmitt Trigger-Inverters, 74LS14	U49,U50	801533-003	2
33.	Integrated Circuit, 3-to-8 Line Decoders	U51	801585-003	1
34.	Integrated Circuit, Octal D-Type Flip-Flops, 74LS273	U54	801550-003	1
35.	Integrated Circuit, Triple 3-Input Positive AND Gates, 74LS11	U56	801532-003	1



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Figure 5-14. Serial Interface
Circuit Card
Assembly (Option)

TABLE 5-14. SERIAL INTERFACE CIRCUIT CARD ASSEMBLY

Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-14	Serial Interface Circuit Card Assembly		249765-001	REF
1.	Capacitor, Ceramic, .1 F, +80% -20%, 50V	C1 - C7, C9-C18,C20,C22, C23,C25 - C28, C32 - C36,C39, C40	801929-001	31
2.	Capacitor, Tantalum, Polarized, 22 F, 10%, 20V	C8,C24	800041-226	2
3.	Capacitor, Tantalum, Polarized, 10 F, 10%, 10V	C19	800040-106	1
4.	Capacitor, 10 pF, 100V	C21	800046-100	1
5.	Capacitor, Tantalum, Polarized, 22 F, 10%, 10V	C29	800040-226	1
6.	Capacitor, Ceramic, 1000 pF, 20%, 50V	C30	801311-102	1
7.	Capacitor, Ceramic, 470 pF, 10%, 100V	C31,C37,C38, C43 - C45	800046-471	6
8.	Capacitor, Ceramic, 22,000 pF, 20%, 50V	C41	801311-223	1
9.	Capacitor, Ceramic, 330 pF, 10%, 100V	C42	800046-331	1
10.	Crystal, 18.432 mHz, HC18 Pkg	Y1	801739-001	1
11.	Diode, Silicon, DPC 123	CR1,CR6, CR7	800743-001	3
12.	Diode, Regulator, Field Effect Current	CR2	810041-001	1
13.	Diode, Voltage Regulator, 3.3V, 500 mW	CR4	800602-001	1

TABLE 5-14. SERIAL INTERFACE CIRCUIT CARD ASSEMBLY (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
14.	Diode, Silicon, 200V, 1 AMP, DPC104, DO-41	CR5	800095-001	1
15.	Integrated Circuit, 8-Bit, N-Channel Microprocessor	U1	801804-001	1
16.	Integrated Circuit, Demultiplex, 74154, 24L DIP, HI Q	U2	801180-003	1
17.	Integrated Circuit, Memory RAM, P2114L	U5,U10,U11, U17	801614-001	4
18.	Integrated Circuit, Octal Buffer/Driver, 20L DIP, 74LS244	U7,U8,U21, U26,U27,U31, U42	801716-003	7
19.	Integrated Circuit, Octal Buffer/Inverter, 20 Pin, 74LS240	U9	801691-003	1
20.	Integrated Circuit, LS Quad 2-Input, NAND Gate, 74LS00, TO-116	U12	801528-003	1
21.	Integrated Circuit, Quad 2-Input NOR Gate, 74LS02	U13,U16	801584-003	2
22.	Integrated Circuit, 450 NSec, RAM, 256x4	U14,U15	801713-004	2
23.	Integrated Circuit, Quad 2-Input OR Gate, 74LS32	U19,U41	801536-003	2
24.	Integrated Circuit, LS Octal D, Flip-Flop, 74LS273, 24 Pin DIP	U20	801550-003	1
25.	Integrated Circuit, Octal D Latches, 74LS373	U22,U23	801961-003	2
26.	Integrated Circuit, 8-Bit Bidirectional Transceiver, 8304	U24,U25	801805-001	2
27.	Integrated Circuit, System Controller and Bus Driver	U28	801802-001	1
28.	Integrated Circuit, USART	U29	810021-001	1

**TABLE 5-14. SERIAL INTERFACE CIRCUIT CARD ASSEMBLY
(Contd)**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
29.	Integrated Circuit, Dual Mono, Multi-Plastic Package, HI-Q	U30	801799-003	1
30.	Integrated Circuit, Quad 2-Input AND Gate, 74LS08	U32,U55	801530-003	2
31.	Integrated Circuit, Baud Rate Generator, Programmable	U33	810000-001	1
32.	Integrated Circuit, Hex Inverter, Buffer/Driver, 7406,	U35	800651-003	1
33.	Integrated Circuit, 3-to-8 Line Decoder Demultiplex, 74LS138	U36	801585-003	1
34.	Integrated Circuit, Quad Buffer, Plastic Package, HI-Q, 74LS125	U37	801812-003	1
35.	Integrated Circuit, Dual, 4-to-1 Multiplexer, 16 Pin, 74LS253	U38	801548-001	1
36.	Integrated Circuit, Optical Coupled Gate, 6N137	U39	810009-001	1
37.	Integrated Circuit, Opto-Insulate, TIL116	U43	810053-001	1
38.	Integrated Circuit, Clock Generator and Driver	U44	801803-001	1
39.	Integrated Circuit, Dual J-K Flip-Flop, HI-Q	U45	801813-003	1
40.	Integrated Circuit, Dual Decode Counter, 74LS390	U46	801999-003	1
41.	Integrated Circuit, LS Hex Inverter, 74LS14	U47,U50,U51	801533-003	3
42.	Integrated Circuit, LS Hex Inverter, 74LS04, TO-116	U48	801529-003	1
43.	Integrated Circuit, Quad MDTL Line Driver, 1488	U49	801889-001	1

**TABLE 5-14. SERIAL INTERFACE CIRCUIT CARD ASSEMBLY
(Contd)**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
44.	Integrated Circuit, Dual 4-Input NAND Gate, 74LS20	U52	801534-003	1
45.	Integrated Circuit, Quad Multi-Line Receiver, MC1489	U53,U54	801888-001	2
46.	Integrated Circuit, Negative Voltage Regulator	U57	801205-502	1
47.	Nut, Hex, Large Pattern, M3x0.5		801502-003	1
48.	Resistor, Network, 7.5K Ohms	U34,U40,U56	801006-752	3
49.	Resistor, Film, 1K, 5%, 1/4W	R1,R2,R5	800030-102	3
50.	Resistor, Film, 470 Ohms, 5%, 1/4W	R3	800030-471	1
51.	Resistor, Film, 2.2K, 5%, 1/4W	R4,R12 - R14, R19	800030-222	5
52.	Resistor, Film, 7.5K, 5%, 1/4W	R6,R7,R10	800030-752	3
53.	Resistor, Film, 470K, 5%, 1/4W	R8	800030-474	1
54.	Resistor, Film, 10K, 5%, 1/4W	R9	800030-103	1
55.	Resistor, Film, 220 Ohms, 5%, 1/2W	R11	800031-221	1
56.	Resistor, Film, 100 Ohms, 5%, 1/4W	R15,R18	800030-101	2
57.	Resistor, Film, 680 Ohms, 5%, 1/4W	R16,R17	800030-681	2
58.	Resistor, Film, 27 Ohms, 5%, 1/4W	R20	800030-270	1
59.	Resistor, Film, 82 Ohms, 5%, 1/4W	R21	800030-820	1
60.	Resistor, Film, 180 Ohms, 5%, 1/4W	R22	800030-181	1
61.	Screw, Pan Head, X-Recessed, M3x8		801500-308	1

**TABLE 5-14. SERIAL INTERFACE CIRCUIT CARD ASSEMBLY
(Contd)**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
62.	Socket, Integrated Circuit, 24 Pin DIP	XMEM1, XMEM2	801864-002	2
63.	Socket, Integrated Circuit, 40 Pin DIP	XU1	801864-004	1
64.	Socket, Integrated Circuit, 28 Pin DIP	XU28, XU29	801864-003	2
65.	Switch, Rocker, 4 Position, SPST	S1,S2,S3	801115-004	3
66.	Terminal, Turret, Swage, .093 Dia x .156 Ht	TP1,TP2	800155-002	2
67.	Transistor, NPN, 30V, 800mA, 2N2222	Q1,Q4,Q5	801830-001	3
68.	Transistor, Silicon, PNP, Without Spacer	Q2,Q3	815200-002	2
69.	Washer, Flat, Steel, M3, 7mm Max OD		801503-003	1
70.	Washer, Split Lock, M3, 5.9mm Max OD		801505-003	1

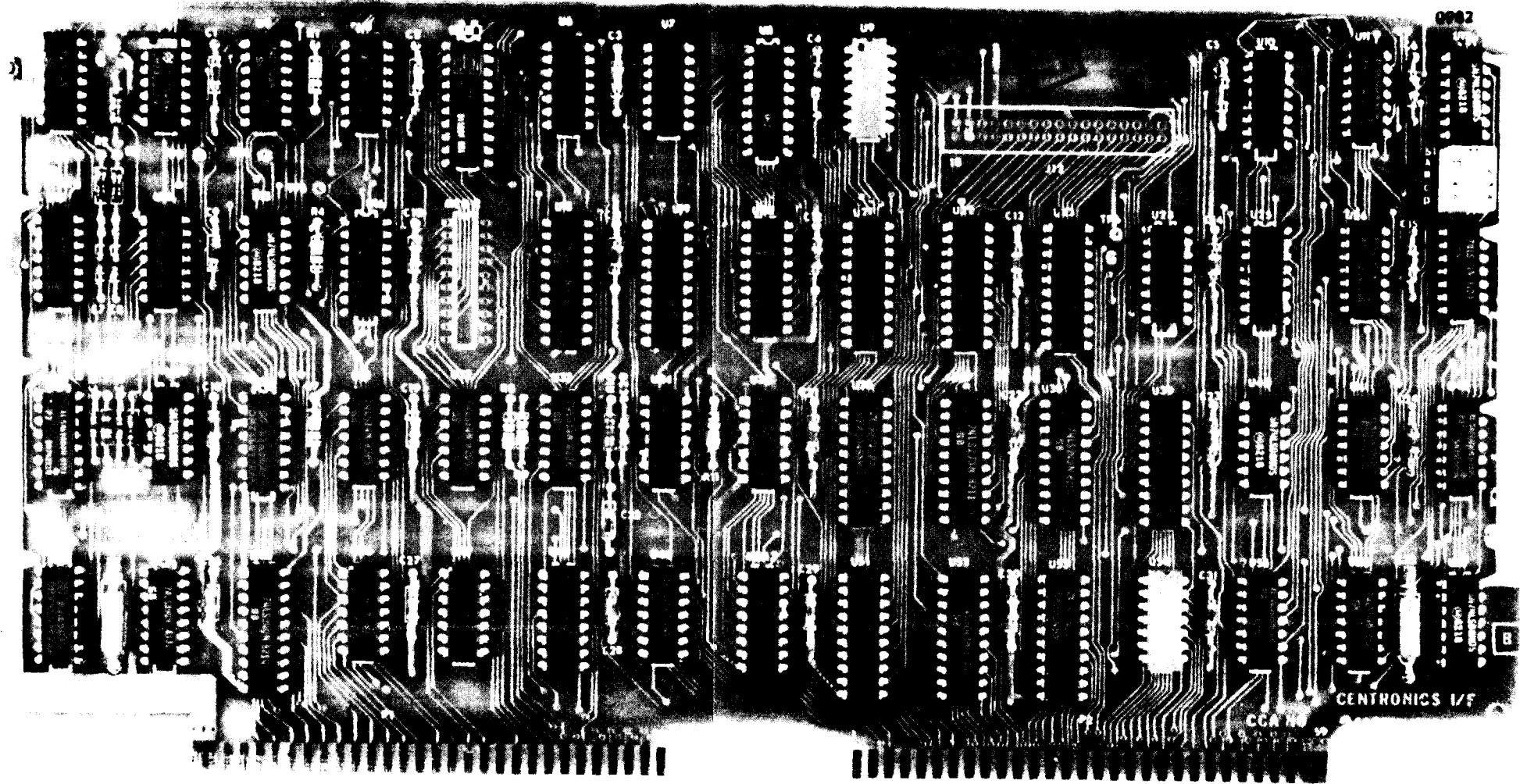


Figure 5-15. DPC Centronics Compatible Interface CCA

TABLE 5-15. DPC CENTRONICS-COMPATIBLE INTERFACE CIRCUIT CARD ASSEMBLY (OPTION)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-15	DPC Centronics-Compatible Interface Circuit Card Assembly (Option)	A2	261370-001	REF
1.	Capacitor, Ceramic, 0.1 μ F, 20%, 50V	C1 - C6,C9 - C15,C18 - C24, C26 - C31,C33	801929-001	27
2.	Capacitor, Ceramic, 1000 pF, 20%, 50V	C7,C8,C16, C17	801311-102	4
3.	Capacitor, Tantalum, Polarized, 22 μ F, 10%, 10V	C25,C32	800040-226	2
4.	Connector, Printed Circuit Board, 34-Position (Option) (Used with TCVFU only)	J12	801737-034	1
5.	Integrated Circuit, PROM, 256x8 Bit, Tri-State Outputs, 74S472	MEM1	815004-001	1
6.	Integrated Circuit, 256x4 Bit ROM, Programmable, 74S287	MEM3	810059-001	1
7.	Resistor, 7.5K Ohms, 5%, 1/4W	R1, R4,R7, R8,R9,R11, R12	800030-752	7
8.	Resistor, 10K Ohms, 5%, 1/4W	R6,R10	800030-103	2
9.	Resistor, 5.6K Ohms, 5%, 1/4W	R5	800030-562	1
10.	Resistor, 100 Ohms, 5%, 1/4W	R2,R3	800030-101	2
11.	Terminal, Turret, Swage, 0.093 Dia x 0.156 High	TP1 - TP7	800155-002	7
12.	Integrated Circuit, Quad 2-Input Positive NAND Gates, 74LS00	U11,U26,U42	801528-003	3

TABLE 5-15. DPC CENTRONICS-COMPATIBLE INTERFACE CIRCUIT CARD ASSEMBLY (OPTION) (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
13.	Integrated Circuit, Dual J-K Flip-Flop with Preset and Clear, 74LS112	U10,U16,U24, U25,U30,U43	801813-003	6
14.	Integrated Circuit, Quad 2-Input Positive OR Gates, 74LS32	U6	801536-003	1
15.	Integrated Circuit, Hex Inverters, 74LS04	U1,U27,U56	801529-003	3
16.	Integrated Circuit, Quad 2-Input Positive NOR Gates, 74LS02	U2,U41	801584-003	2
17.	Integrated Circuit, Quad 2-Input Positive AND Gates, 74LS08	U12,U15,U29, U40,U57	801530-003	5
18.	Integrated Circuit, Dual 4-Input Positive NAND Gates, 74LS20	U4	801534-003	1
19.	Integrated Circuit, Dual D-Type Flip-Flop with Preset and Clear, 74LS74	U3	801540-003	1
20.	Integrated Circuit, Dual Mono-stable Multivibrators, 74LS221	U28	801023-003	1
21.	Integrated Circuit, Dual 4-Input Positive NAND Schmitt Triggers, 74LS14	U31,U32,U33, U49	801533-003	4
22.	Integrated Circuit, Octal Gated Inverters, Line Drivers/Line Receivers, 74LS240	U18,U38,U45, U52	801691-003	4
23.	Integrated Circuit, Octal Buffers/Line Drivers/Line Receivers, 74LS244	U19,U21,U22, U23,U39,U51	801716-003	6
24.	Integrated Circuit, Resistor Network, 7.5K Ohms	U9,U54	801006-752	2

**TABLE 5-15. DPC CENTRONICS-COMPATIBLE INTERFACE
CIRCUIT CARD ASSEMBLY (OPTION) (Contd)**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
25.	Integrated Circuit, 8-Bit Bi-directional Bus Transceiver, 8304	U36,U53	801805-001	2
26.	Integrated Circuit, Triple 3-Input Positive NAND Gates, 74LS10	U13,U55	801531-003	2
27.	Integrated Circuit, Triple 3-Input Positive AND Gates 74LS11	U33	801532-003	1
28.	Integrated Circuit, Presettable Counters/Latches, Binary, 74LS197	U34,U35	801963-003	2
29.	Integrated Circuit, 4-Bit Static RAM, 2114	U8,U20	801614-001	2
30.	Integrated Circuit, Quad Buffer, 74LS125	U7	801812-003	1
31.	Integrated Circuit, Dual Decode Counters, BCD, 74LS390	U44	801999-003	1
32.	Integrated Circuit, Resistor Network, 390 Ohms	U46,U47	801006-391	2
33.	Integrated Circuit, 3-to-8 Line Decoders/Multiplexers, 74LS138	U48	801585-003	1
34.	Integrated Circuit, Quad 2-Input NAND Gate	U14	801800-003	1
35.	Integrated Circuit, Octal D Type Flip-Flops, 74LS273	U37	801550-003	1
36.	Switch, Rocker, 4-Position, SPST	S1	801115-004	1

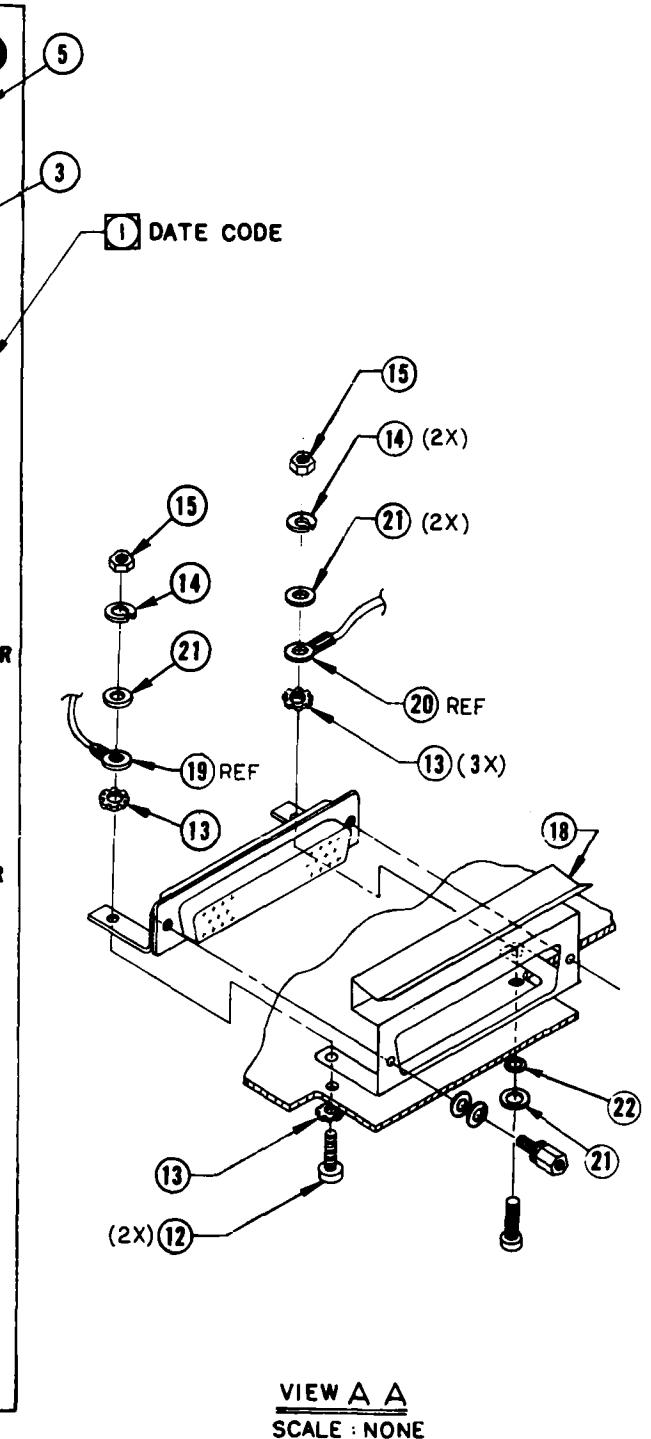
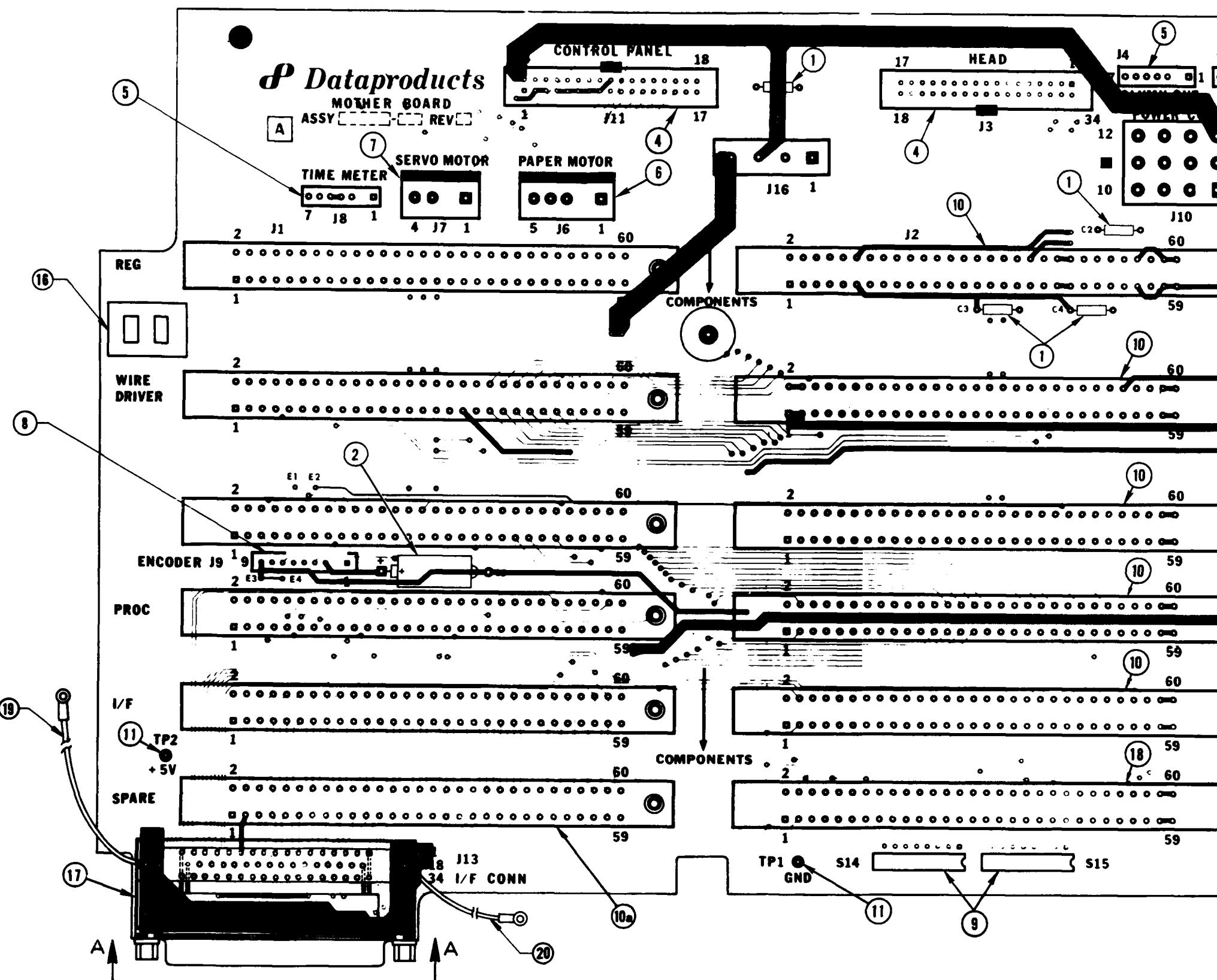


Figure 5-16. Mother Board Circuit Card Assembly

TABLE 5-16. MOTHER BOARD CIRCUIT CARD ASSEMBLY

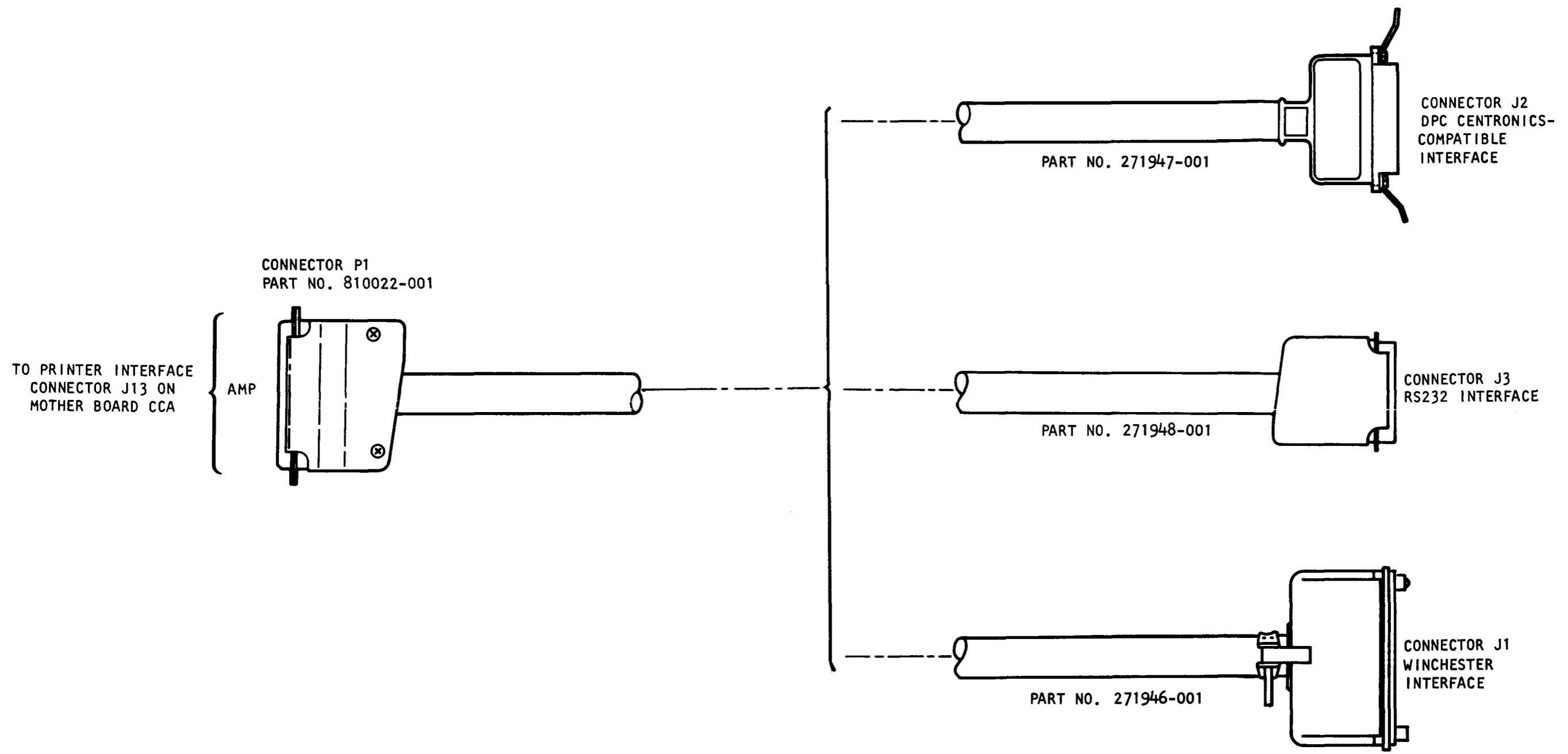
Figure & Index No.	Description	Reference Designator	Part No.	Qty
Fig. 5-16	Mother Board Circuit Card Assembly, 5 Card Slot	A7	261650-001	REF
	Mother Board Circuit Card Assembly, 6 Card Slot (Option)	A7	261650-002	1
1.	Capacitor, Ceramic, 0.1 μ F, +80% -20%, 50V	C1 thru C4	801929-001	4
2.	Capacitor, Tantalum, Polarized, 47 μ F, 10%, 10V	C5	800040-476	1
3.	Connector, Header, 12-Pin	J10	801882-001	1
4.	Connector, Header, 34-Pin	J3,J11	801908-001	2
5.	Header, Polarized, 6 Contacts, 2.54mm Centers	J4,J5,J8	801909-001	3
6.	Header, Polarized, 5 Position, 3.96mm Centers	J6	801885-002	1
7.	Header, Polarized, 4 Position, 3.96mm Centers	J7	801885-001	1
8.	Header, Polarized, 8 Contacts, 2.54mm Centers	J9	801909-002	1
9.	Switch, Rocker, 8 Position, SPST	S14,S15	801115-009	2
10.	Connector, 60 Pin, Card Edge	J1,J2 (REF)	800042-002	10
10a.	Connector, 60 Pin, Card Edge*	J1,J2 (REF)	800042-002	2
11.	Terminal, Turret, Swage, 0.093 Dia x 0.156 High	TP1,TP2	800155-002	2
12.	Screw, Pan Head, Recessed, Steel, M2.5x10mm		801500-910	2
13.	Washer, Lock, External Tooth, M3		801504-003	3
14.	Washer, Split Lock, M3.5x9mm Max OD		801505-003	2

* 6 Card Slot Option Only

TABLE 5-16. MOTHER BOARD CIRCUIT CARD ASSEMBLY (Contd)

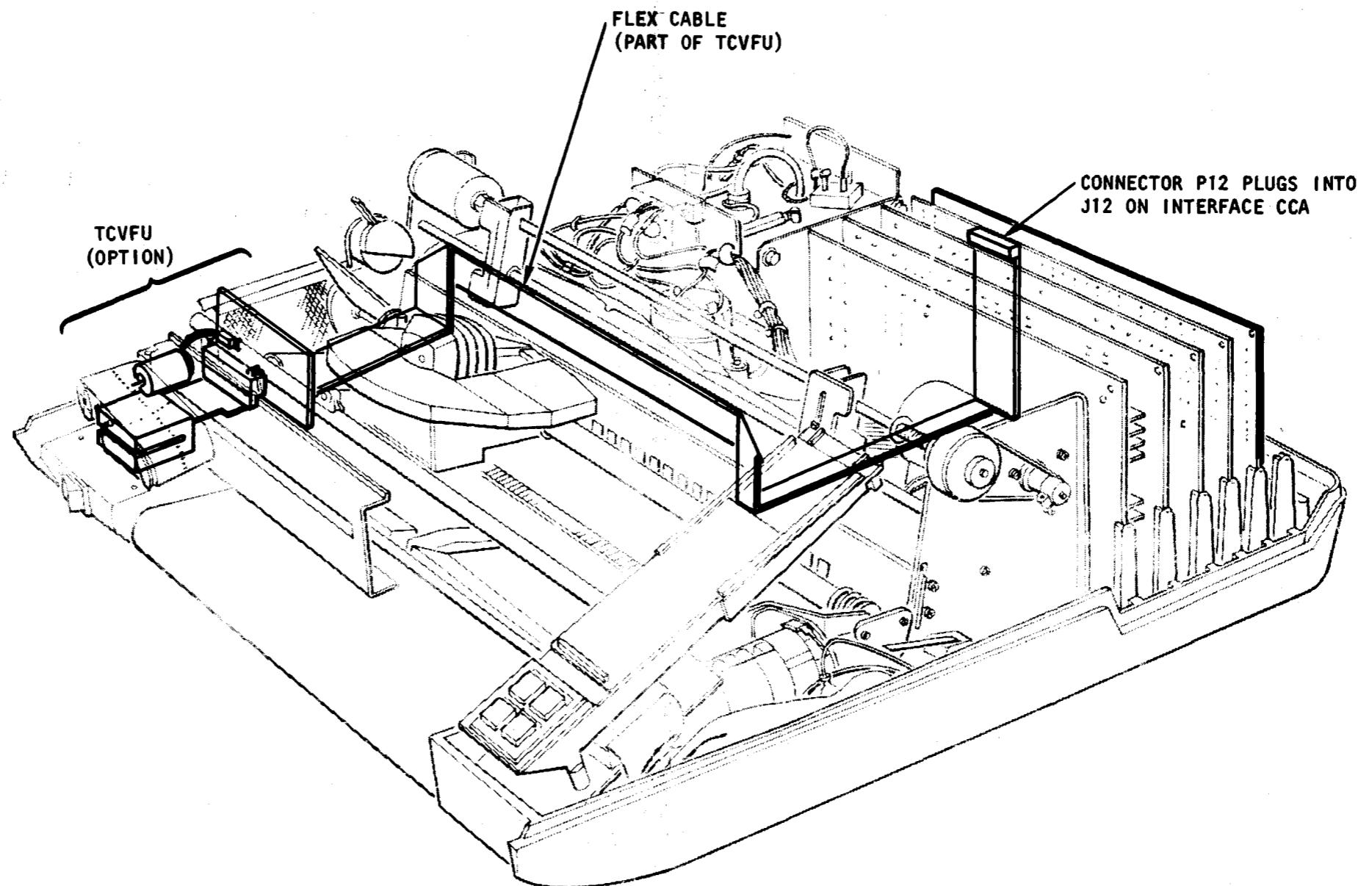
Figure & Index No.	Description	Reference Designator	Part No.	Qty
15.	Nut, Hex, M2.5		801502-025	2
16.	Clip, Cable		815704-001	1
17.	Receptacle, Female	J13	815503-001	1
18.	I/O Connector Shield		271964-001	1
19.	Ground Strap, Left		261606-001	1
20.	Ground Strap, Right		261606-002	1
21.	Washer, Flat, Steel, M3.7 mm		801503-003	3
22.	Washer, Flat, Nylon, .125 OD		800167-007	1

* 6 Card Slot Option Only



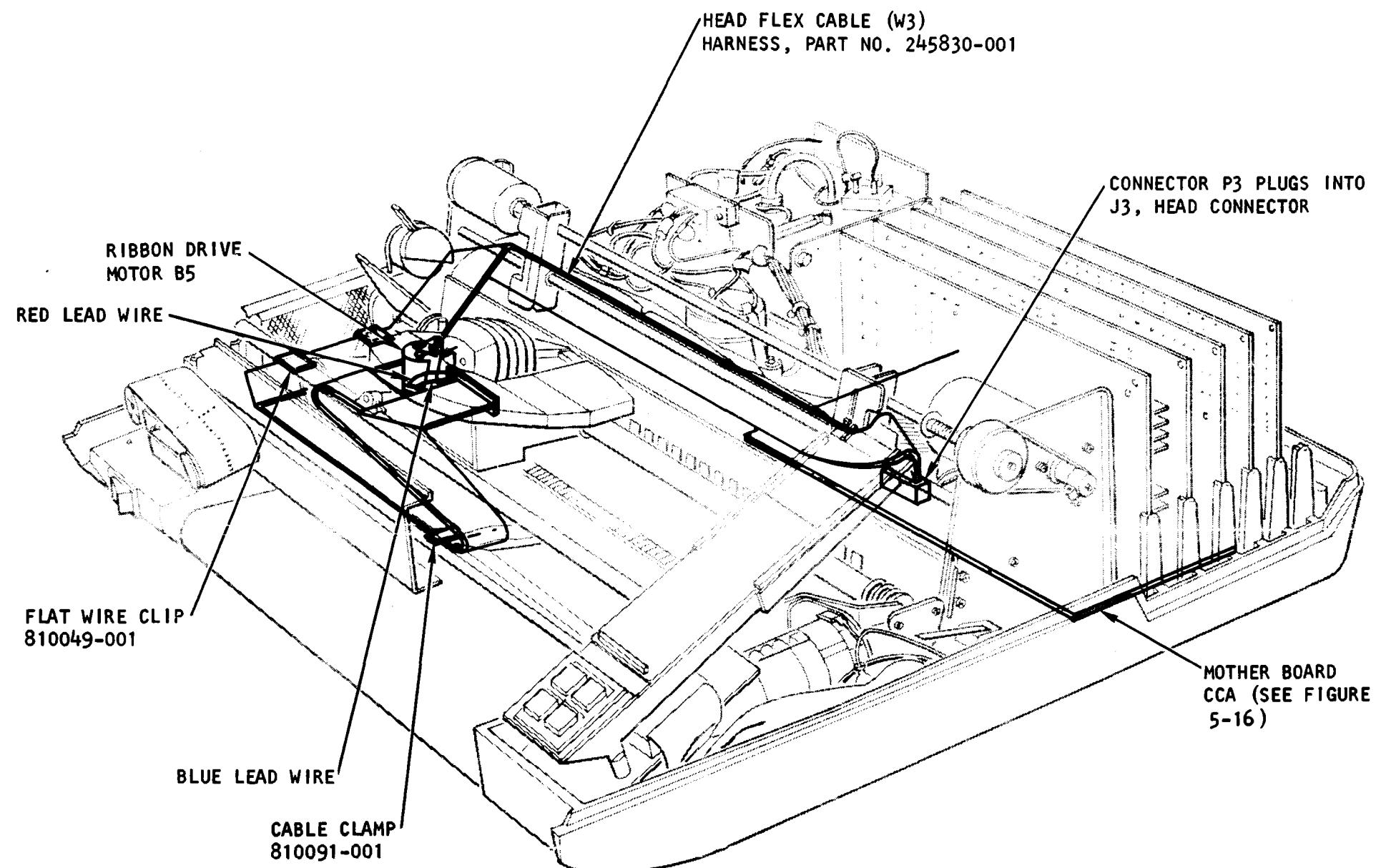
245123.1120

Figure 5-17. Adapter Cable Assemblies (Option)



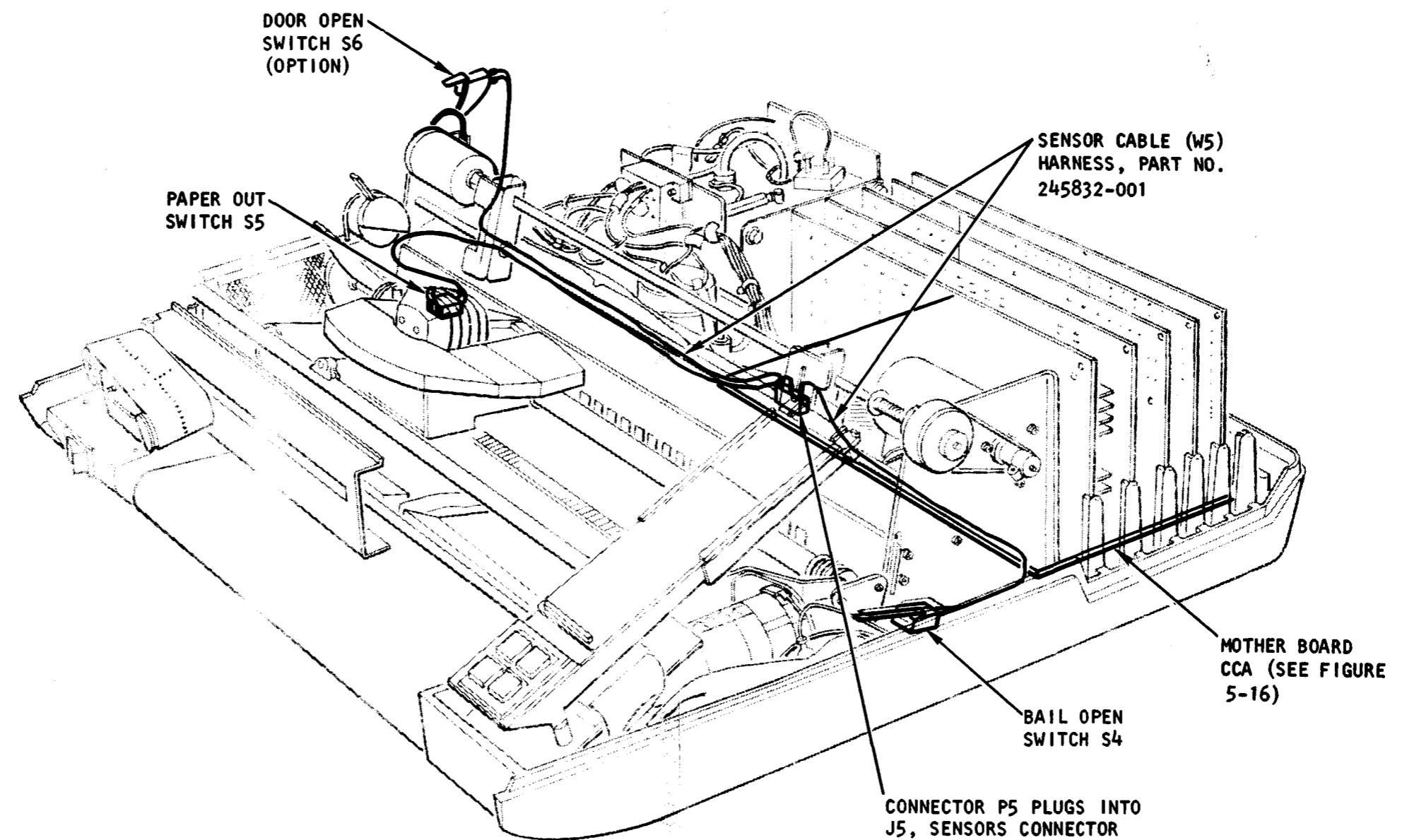
246123.1128

Figure 5-18. TCVFU Harness Routing Diagram



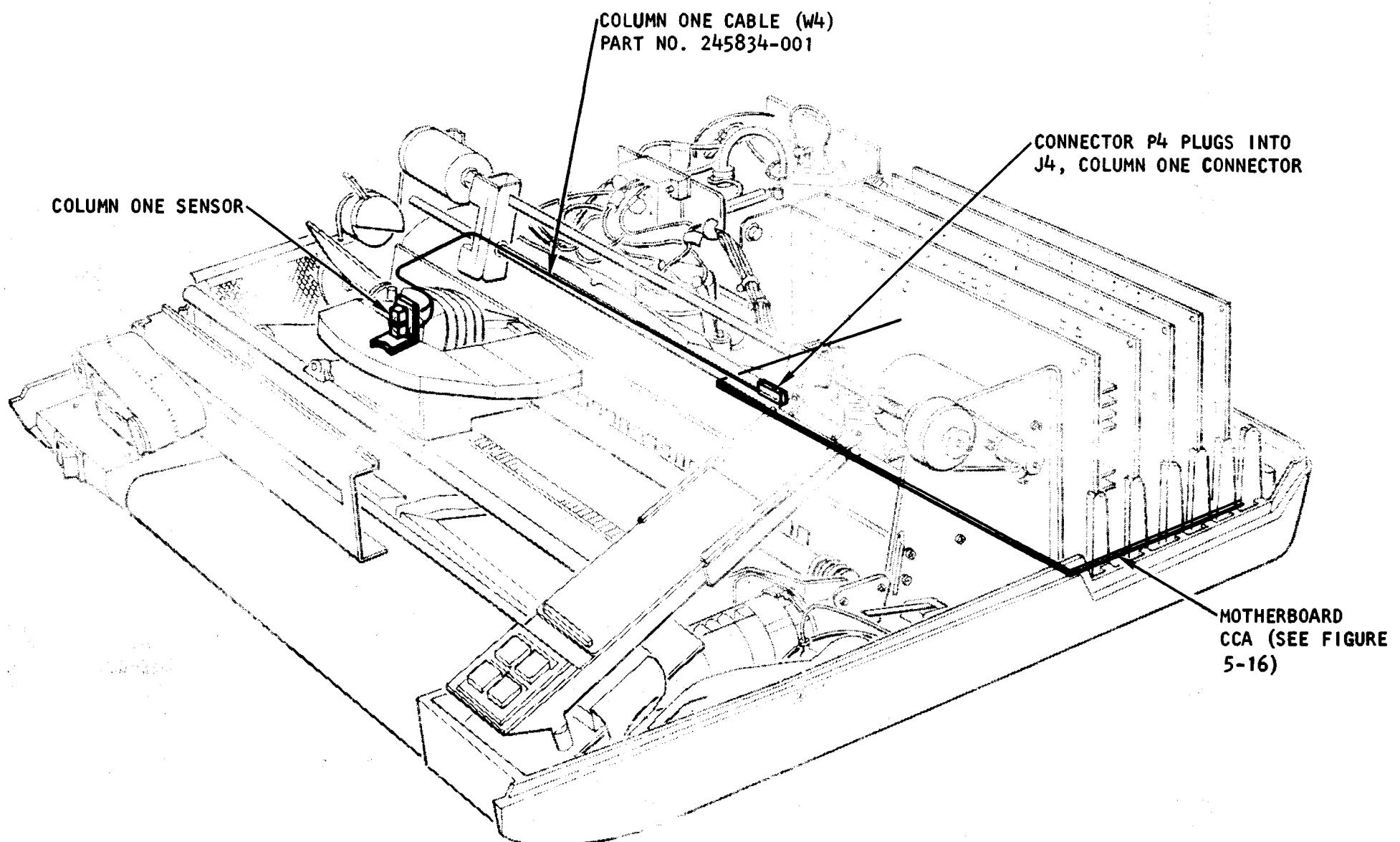
245128.1129

Figure 5-19. Head Harness
Routing Diagram



245123.1127

Figure 5-20. Switch Harness Routing Diagram



246123.1128

Figure 5-21. Column One
Harness Routing
Diagram

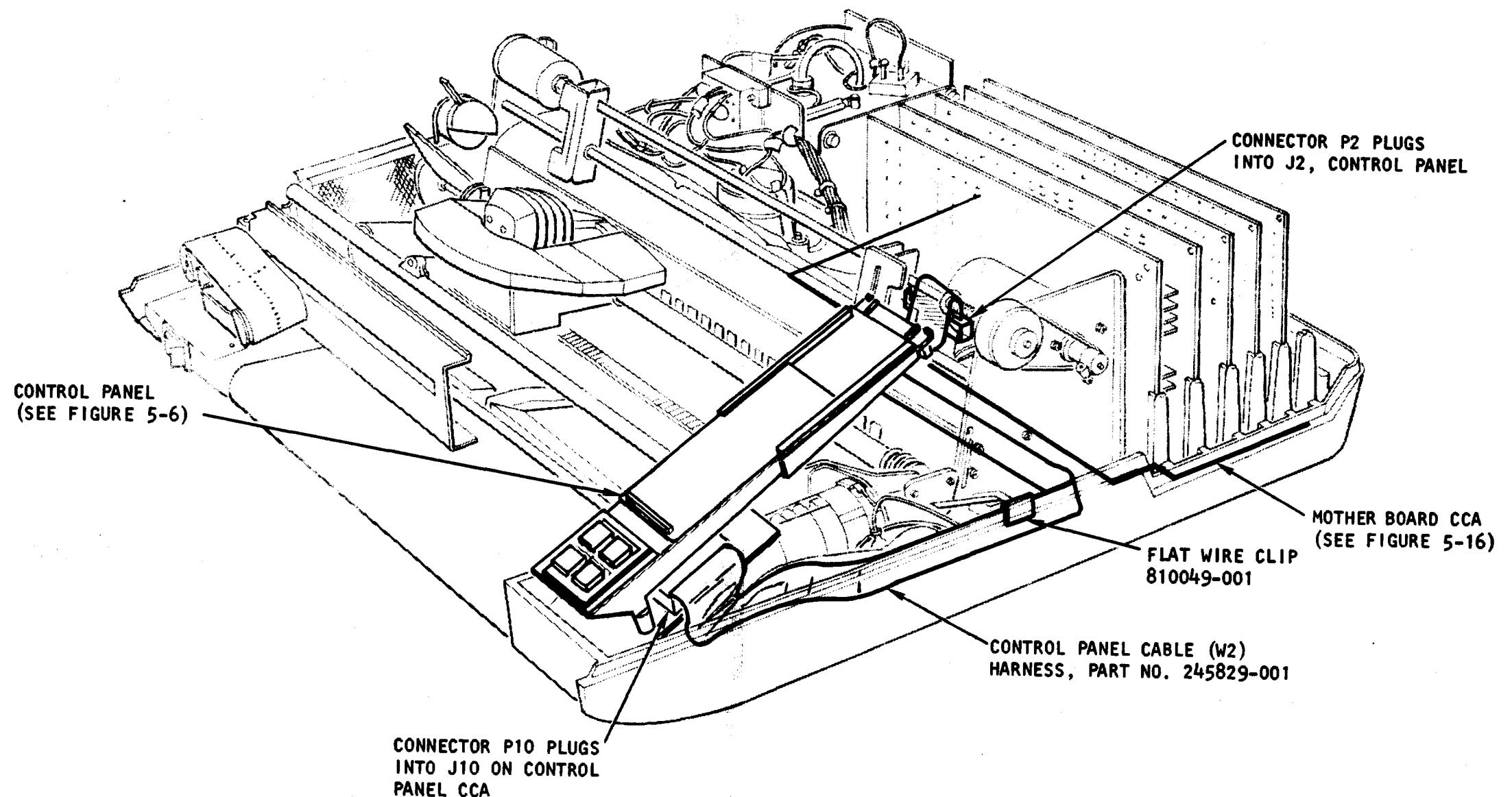
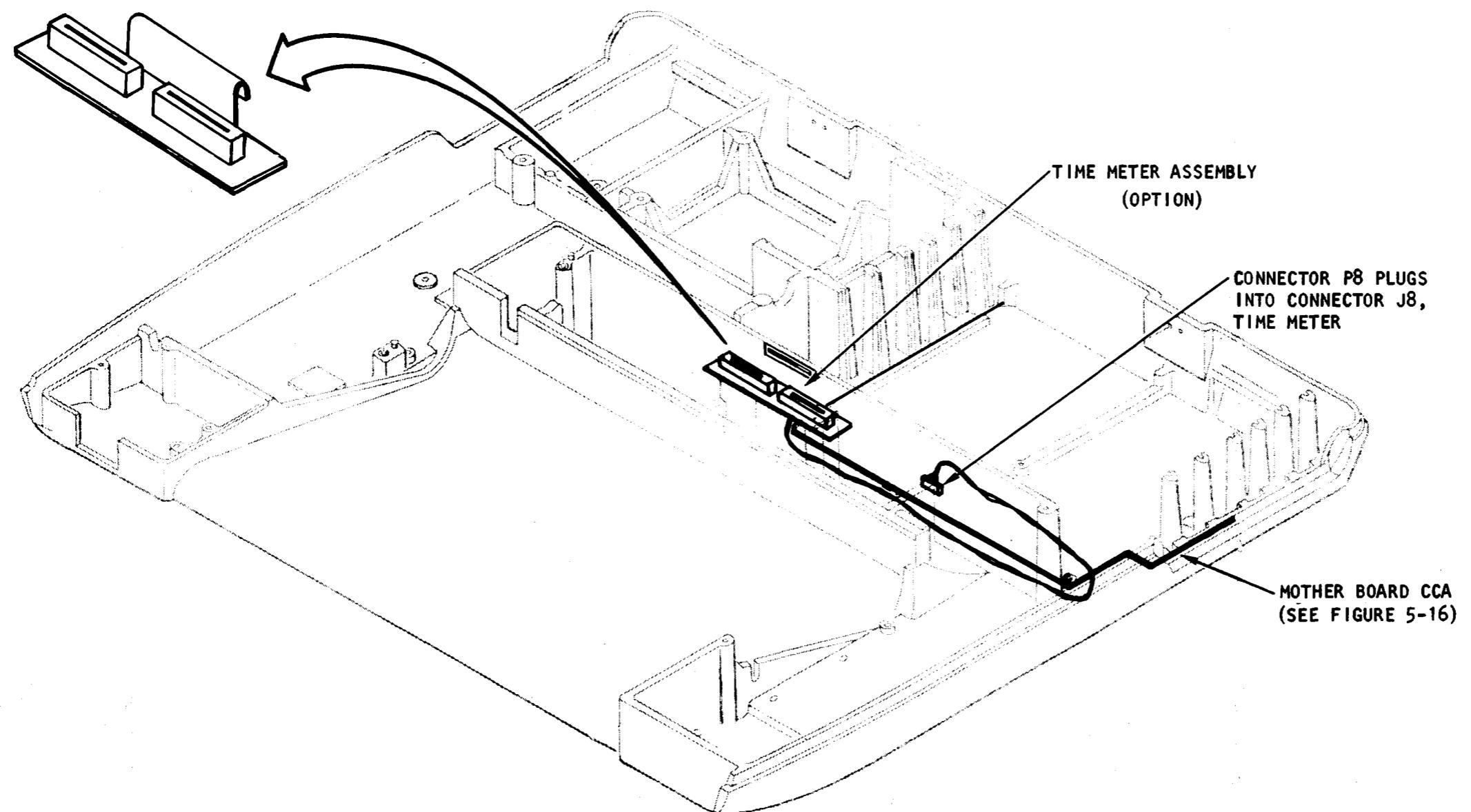
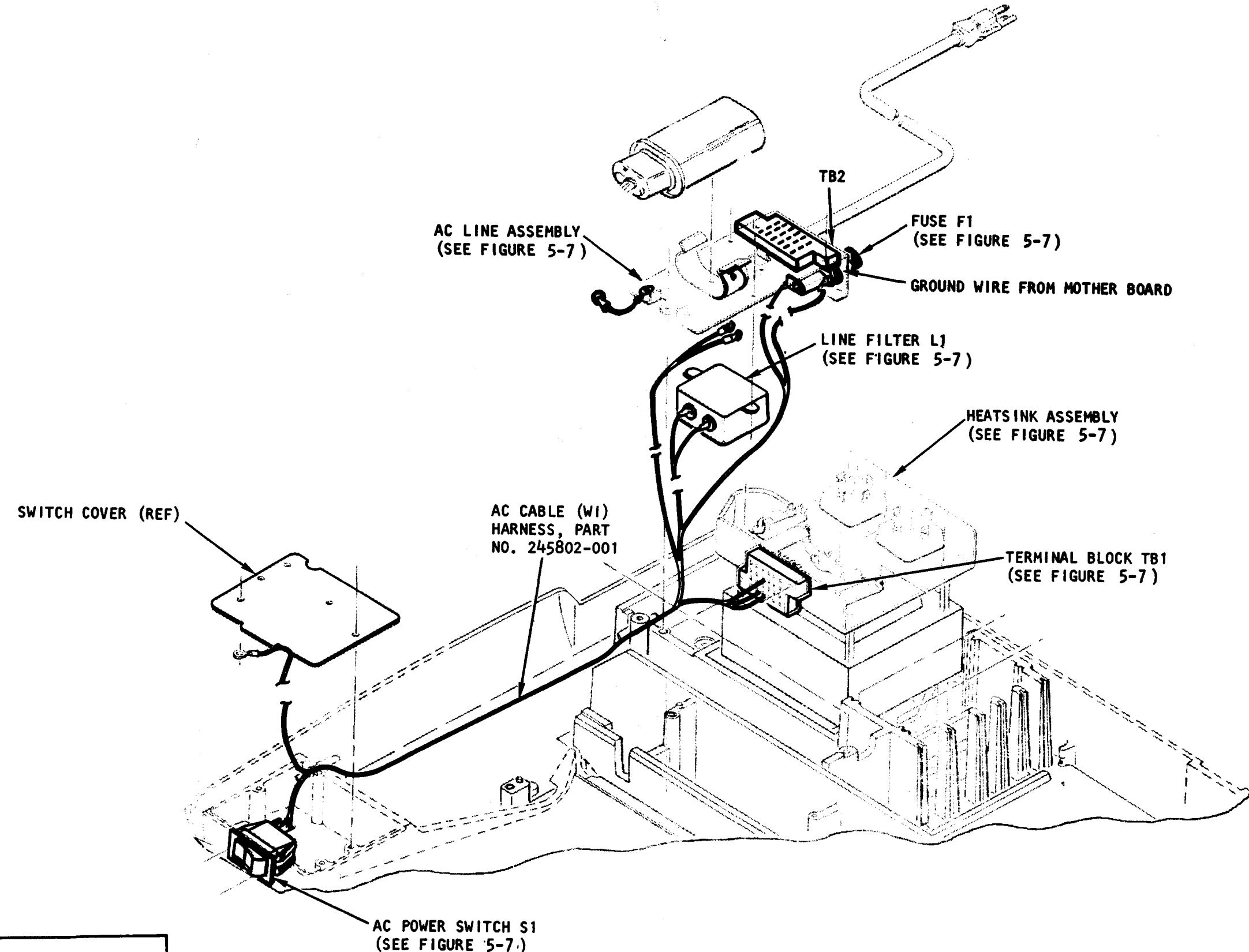


Figure 5-22. Control Panel
Harness Routing
Diagram



246123.1132

Figure 5-23. Time Meter
Cabling Diagram



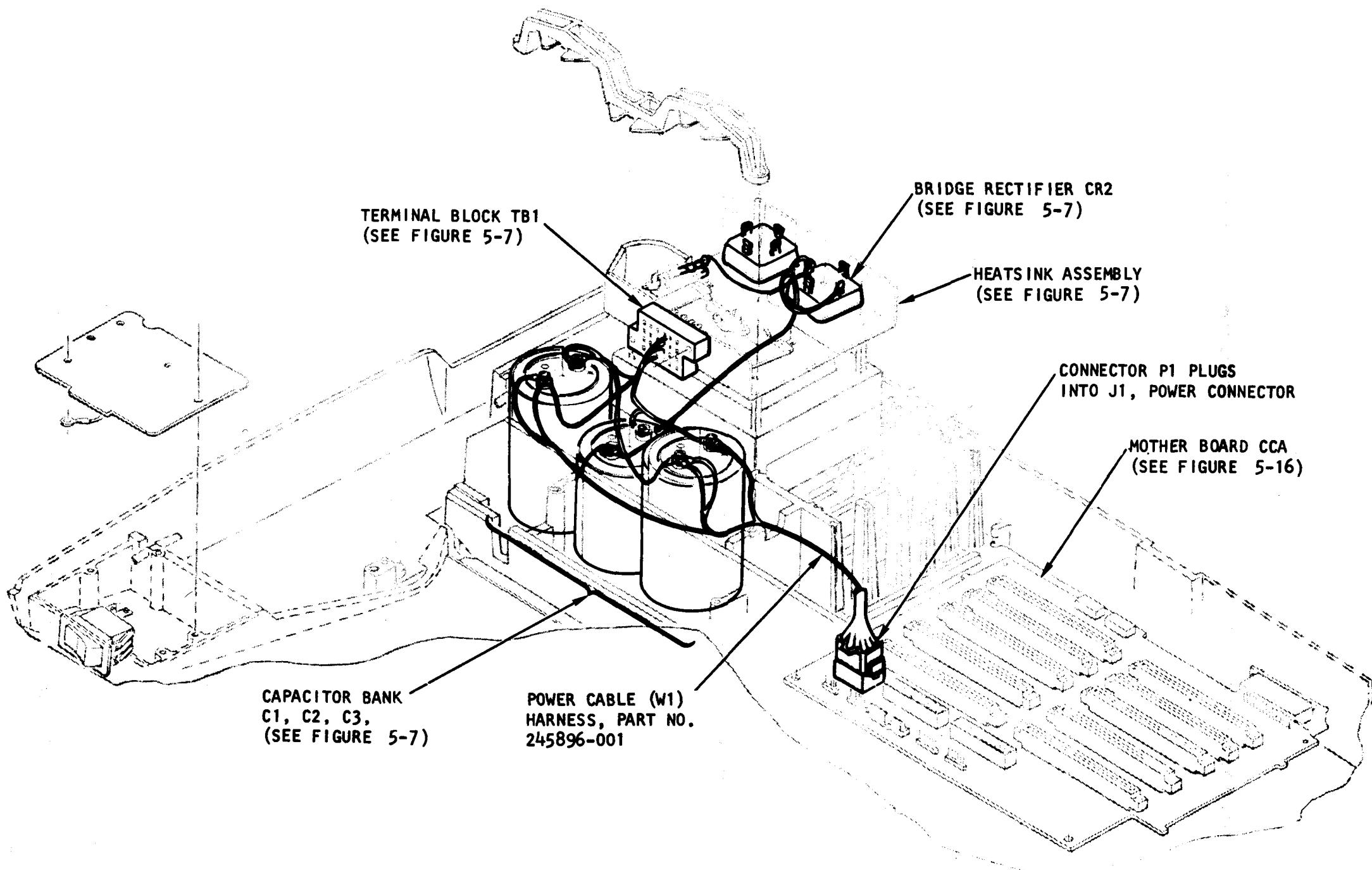
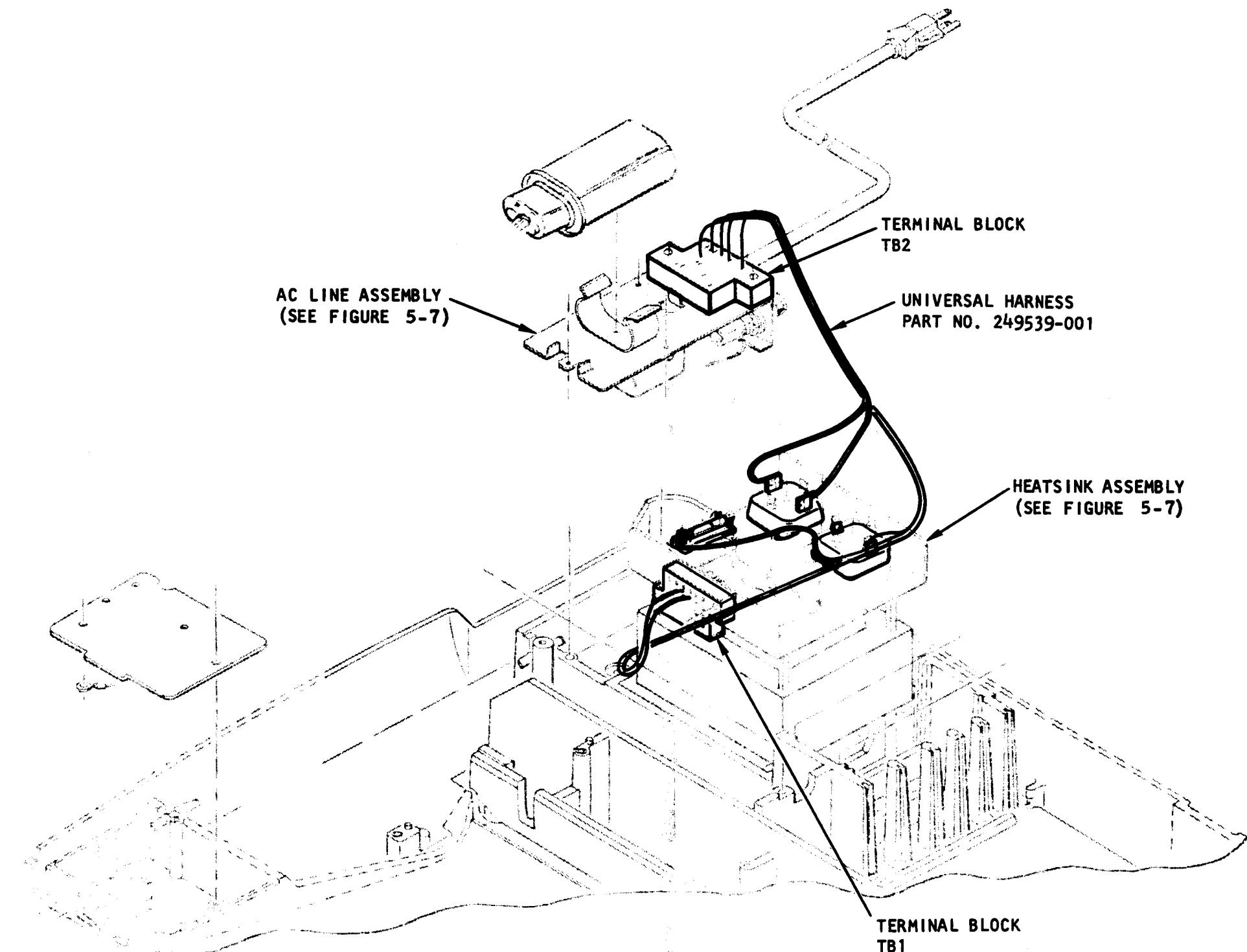


Figure 5-25. Power Harness Routing Diagram



246123.1121

Figure 5-26. Universal Harness
Routing Diagram

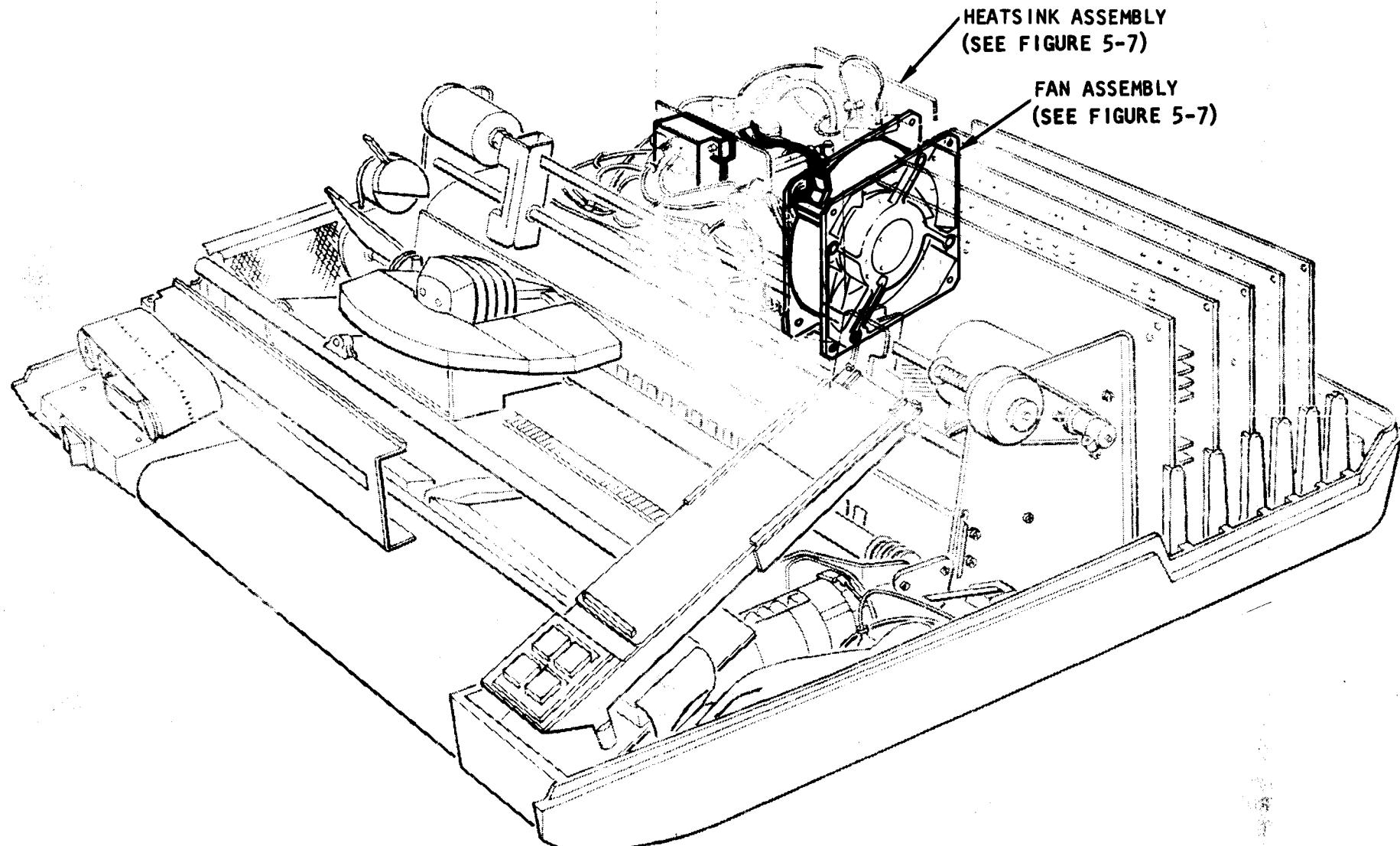
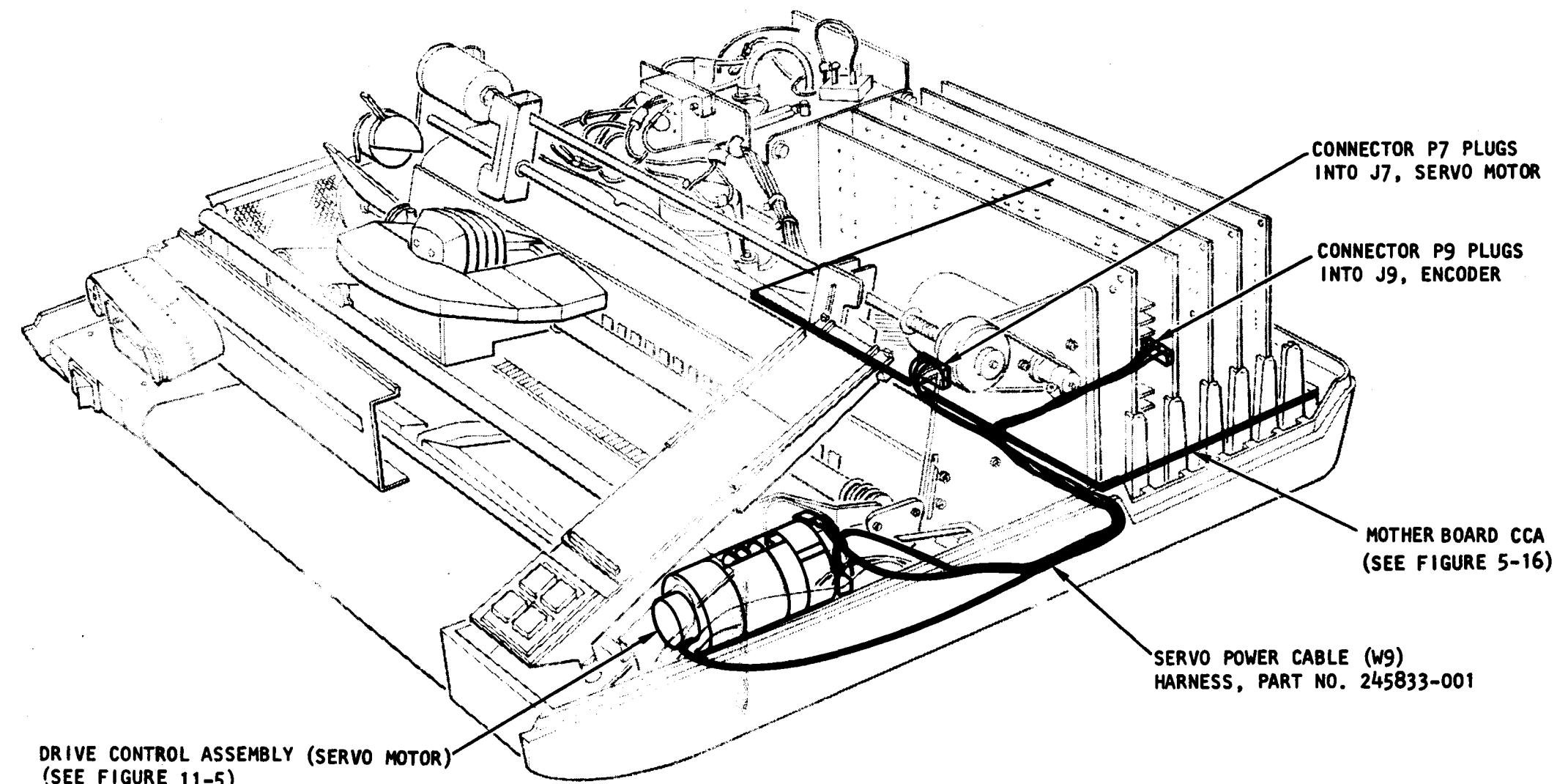


Figure 5-27. Fan Cabling Diagram

246123.1123



245123 1122

Figure 5-28. Servo Power
Harness Routing
Diagram

TABLE 5-17. CONTROL PANEL BUTTON KIT (OPTION)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
1.	Control Panel Button Kit		249745-001	REF
1.	Key, ON LINE	S4*	249135-001	1
2.	Key, ALARM/CLEAR	S7*	249135-002	1
3.	Key, PAPER STEP	S5*	249135-004	1
4.	Key, TOP OF FORM	S6*	249135-005	1
5.	Lamp, Subminiature, Type 13	L4,L7*	801931-001	5

* Listed for reference only.

TABLE 5-18. KNOB ASSEMBLY KIT (OPTION)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
1.	Knob Assembly Kit		249782-001	REF
1.	Knob, Form Length	S8*	245536-001	1
2.	Label, Form Length Knob		249482-001	1

* Listed for reference only.

**TABLE 5-19. SERIAL INTERFACE CIRCUIT CARD ASSEMBLY
PROGRAMMED EPROM KIT 2708 (OPTION)**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
	Serial Interface Circuit Card Assembly EPROM Kit 2708			
1.	Integrated Circuit, 1024 x 8 Bit EPROM, 2316E	MEM1	249688-041	1
2.	Integrated Circuit, 1024 x 8 Bit EPROM, 2316E	MEM2	249688-042	1

**TABLE 5-20. PROCESSOR CIRCUIT CARD ASSEMBLY
PROGRAMMED EPROM KIT 2708 (OPTION)**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
	Processor Circuit Card Assembly EPROM Kit 2708			
1.	Integrated Circuit, 1024 x 8 Bit EPROM	MEM1	249687-021	1
2.	Integrated Circuit, 1024 x 8 Bit EPROM	MEM2	249687-022	1
3.	Integrated Circuit, 1024 x 8 Bit EPROM	MEM3	249687-023	1
4.	Integrated Circuit, 1024 x 8 Bit EPROM	MEM4	249687-027	1
5.	Integrated Circuit, 1024 x 8 Bit EPROM	MEM6	249687-024	1
6.	Integrated Circuit, 1024 x 8 Bit EPROM	MEM7	249687-025	1
7.	Integrated Circuit, 1024 x 8 Bit EPROM	MEM8	249687-026	1

**TABLE 5-21. PROCESSOR CIRCUIT CARD ASSEMBLY
PROGRAMMED EPROM KIT 2716**

Figure & Index No.	Description	Reference Designator	Part No.	Qty
1.	Processor Circuit Card Assembly Programmed EPROM Kit 2716		249911-001	REF
1.	Integrated Circuit, 2048 x 8 Bit EPROM	MEM1	249736-021	1
2.	Integrated Circuit, 2048 x 8 Bit EPROM	MEM2	249736-022	1
3.	Integrated Circuit, 2048 x 8 Bit EPROM	MEM3	249736-023	1
4.	Integrated Circuit, 2048 x 8 Bit EPROM	MEM4	249736-024	1

TABLE 5-22. SPRING KIT (OPTION)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
1.	Spring Kit		261287-001	REF
1.	Spring, Paper Tension		245573-001	1
2.	Spring, Belt Tension		245744-001	1
3.	Spring, Paper Chute		245733-001	1
4.	Spring, Assembly, Detented		249872-001	1
5.	Spring, Shoulder		245734-001	1
6.	Spring, Hub		245595-001	1
7.	Spring, Compression		261688-001	1

TABLE 5-23. HARDWARE KIT (OPTION)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
1.	Hardware Kit		249747-001	REF
1.	Washer, Front Bar		245712-001	4
2.	Washer, Adjustable Knob		245763-001	4
3.	Screw, Pan Head, X-Recessed, Steel, M2x12mm		801500-212	4
4.	Screw, Pan Head, X-Recessed, M3x4mm		801500-304	4
5.	Screw, Pan Head, X-Recessed, Steel, M3x6mm		801500-306	4
6.	Screw, Pan Head, X-Recessed, Steel, M3x8mm		801500-308	4
7.	Screw, Pan Head, X-Recessed, Steel, M3x10mm		801500-310	4
8.	Screw, Pan Head, X-Recessed, Steel, M3x16mm		801500-316	4
9.	Screw, Pan Head, X-Recessed, Steel, M3x22mm		801500-322	4
10.	Screw, Pan Head, X-Recessed, Steel, M4x8mm		801500-408	4
11.	Screw, Pan Head, X-Recessed, Steel, M4x10mm		801500-410	4
12.	Screw, Pan Head, X-Recessed, Steel, M4x12mm		801500-412	4
13.	Screw, Pan Head, X-Recessed, Steel, M4x16mm		801500-416	4
14.	Screw, Pan Head, X-Recessed, Steel, M4x20mm		801500-420	4

TABLE 5-23. HARDWARE KIT (OPTION) (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
15.	Screw, Pan Head, X-Recessed, Steel, M2.5x4mm		801500-904	4
16.	Screw, Pan Head, X-Recessed, Steel, M2.5x6mm		801500-906	4
17.	Screw, Pan Head, X-Recessed, Steel, M2.5x8mm		801500-908	4
18.	Screw, Pan Head, X-Recessed, Steel, M2.5x10mm		801500-910	4
19.	Screw, Pan Head, X-Recessed, Steel, M2.5x12mm		801500-912	4
20.	Screw, Pan Head, X-Recessed, Steel, M2.5x14mm		801500-914	4
21.	Screw, Pan Head, X-Recessed, Steel, M2.5x16mm		801500-916	4
22.	Screw, Flat Head, X-Recessed, M2x8mm		801501-208	4
23.	Screw, Flat Head, X-Recessed, M3x16mm		801501-316	4
24.	Screw, Flat Head, X-Recessed, M4x8mm		801501-408	4
25.	Nut, Hex, Steel, M2		801502-002	4
26.	Nut, Hex, Steel, Large Pattern, M3x0.5		801502-003	4
27.	Nut, Hex, Steel, Large Pattern, M4x0.7		801502-004	4
28.	Nut, Hex, Steel, Size M2.5		801502-025	4
29.	Washer, Flat, Steel, Size M3, 7mm Max OD		801503-003	4

TABLE 5-23. HARDWARE KIT (OPTION) (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
30.	Washer, Flat, Steel, Size M4, 9mm Max OD		801503-004	4
31.	Washer, Flat, Steel, Size M6, 13.0mm Max OD		801503-006	4
32.	Washer, Flat, Steel, Size M8		801503-008	4
33.	Washer, Flat, Steel, Size M14		801503-014	4
34.	Washer, Flat, Steel, Size M2.5		801503-025	4
35.	Washer, Lock, External Tooth, Steel, Size M3		801504-003	4
36.	Washer, Lock, External Tooth, Steel, Size 4		801504-004	4
37.	Washer, Lock, Internal Tooth, Steel, Size M3		801504-103	4
38.	Washer, Lock, Internal Tooth, Steel, Size 4		801504-104	4
39.	Washer, Lock, Steel, Size M2.5		801504-126	4
40.	Washer, Split Lock, Steel, Size M3, 5.9mm Max OD		801505-003	4
41.	Washer, Split Lock, Steel, Size M4, 7.3 Max OD		801505-004	4
42.	Screw, Cap, Socket Head, M3x12mm		801507-312	4
43.	Screw, Set, Steel, M4x6mm		801508-406	4
44.	Screw, Hex Head, Cap, Steel, M3x8mm		801513-308	4
45.	Screw, Hex Head, Cap, Steel, M3x25mm		801513-325	4

TABLE 5-23. HARDWARE KIT (OPTION) (Contd)

Figure & Index No.	Description	Reference Designator	Part No.	Qty
46.	Screw, Button Head, Steel, M6x16mm		801519-616	4
47.	Screw, Taptite		801858-001	4

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